

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2067.—VOL. XLV.

LONDON, SATURDAY, APRIL 3, 1875.

WITH SUPPLEMENT. PRICE SIXPENCE PER ANNUM, BY POST, 21 4s.

R. JAMES H. CROFTS, STOCK AND SHARE BROKER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.

Established 1842.
Business transacted in all descriptions of MINING Stocks and Shares (British Foreign), Banks, Bonds, Railways, Miscellaneous, Insurance, Assurance, Gas, and Dock Shares.
Business negotiated in Shares not having a general market value.
Business in all COLLIERY and IRON Shares.
Business on HAND in all the leading TINS, COPPER, and LEAD Shares.
Shares sold for forward delivery (one or two months) on deposit of 20 per cent. upwards of 17 per cent. Also BILSON and CRUMP, THORP'S GAWBER, ALL, PLINLIMMON, GLAISDALE QUARRY, and SPON LANE COLLIERY.
Monthly and Daily Price Lists issued.
Bankers: City Bank, London; South Cornwall Bank, St. Austell.

SPECIAL DEALINGS in the following, or part:—30 Bamfylde, 23s. 9d.; 15 Bilson, 40s. 6d.; 40 Cardiff and Swansea, 24 7s. 6d.; 1 Cedar Creek, 21 10s.; 100 Crenver, 10s. 6d.; 100 Cleo Hill, 10s. 6d.; 100 Chapel House, 300 Javali, 50 Lawe's Chemical, 25 13s. 9d.; 20 Langdale Chemical, 55 Penstruthal, 10s. 3d.; 180 Plynn, 2s. 9d.; 100 Positive, 15s. 3d.; 80 Parys Mountain, 14s.; 50 Rookhope, 10 Richards; 10 Thorp's Gawber.

NOTE—SPECIAL BUSINESS in CHAPEL HOUSE COLLIERY shares, yielding at present upwards of 17 per cent. Also BILSON and CRUMP, THORP'S GAWBER, ALL, PLINLIMMON, GLAISDALE QUARRY, and SPON LANE COLLIERY.

R. W. H. BUMPUS, STOCK AND SHARE BROKER,
44, THREADNEEDLE STREET, LONDON, E.C.
Business in MINING and COLLIERY Shares of every description, English and Foreign Stocks, Colonial Government Bonds, Railways, Banks, and Miscellaneous Shares, and all Securities dealt in on the London Stock Exchange, for INVESTMENT or SPECULATION.
Purchases and Sales negotiated in the most judicious manner.
Speculative Accounts opened for the Fortnightly Settlement.
References given and required when necessary.
A Stock and Share List forwarded to bona fide Investors free on application.
Bankers: The National Provincial Bank of England, E.C.

W. H. B. has SPECIAL BUSINESS in the undermentioned:—
Bamfylde, 27s. 6d. 30 Gawton, 12s. 15 Roman Gravel, 2s. 6d.
Bog, 12s. 100 Gold Run, 20s. 20 Rookhope, 8s.
Birdseye Creek, 22 6s. 3d. 25 Hington, 21s. 6d. 20 Richmond, 27 6s. 3d.
Chicago (Silver), 23 1/2 40 Industrial Coal & Iron, 100 St. Patrick, 21 1/2 13s.
Chapel House Colliery, 24 1/2 20 New Quebrada, 24 11 30 Van Conso, 22 13s.
Chontales, 2s. 6d. 100 Javali, 17s. 6d. 20 So. Condurow, 24 8 9
Carn Brea, 24 6d. 5 Tankerville, 21 1/2 40 Tecoma, 26s. 3d.
Cedar Creek, 30s. 6d. 25 Marke Valley, 21 1s. 6d. 20 United Mexican, 22 1/2
Devon Consols, 36s. 3d. 20 Malabar, 14s. 30 Van Conso, 22 13s.
Dolcoath, 24 6d. 20 New Quebrada, 24 11 30 Van Conso, 22 13s.
Emma (Silver), 21 1/2 100 Old Trebutget, 7s. 6d. 200 West Milw, 6s.
East Lovell, 24 6d. 50 Plynnimmon, 4s. 50 W. Esqair Lie, 25s.
Eberhardt, 24 6d. 20 Pennerley, 31s. 6d. 10 Wheel Peavor, 25 1/2
East Garadon, 22s. 6d. 20 Penstruthal, 12s. 6d. 5 West Chiverton, 10s.
Flagstaff, 22 8s. 9d. 100 Prince of Wales, 2s. 6d. 25 Welsh Freehold, 22 1/2
Frontino, 6s. 100 Fort Phillip, 16s. 6d.

M. E. J. BARTLETT, STOCK AND SHARE DEALER,
No. 30, GREAT ST. HELEN'S, LONDON, E.C. (Established 10 years),
SPECIAL BUSINESS in South Condurow and Prince Patrick Shares, at low prices.

Now ready, price 1s. 6d., post free 2d. extra.
HOW TO INVEST: or, CAPITAL, ITS PROFITABLE EMPLOYMENT BY JUDICIOUS INVESTMENTS.
"Everybody should read it."
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JOHN RISLEY (SWORN), STOCK AND SHARE BROKER,
77, CORNHILL, LONDON.

Turkish Six Per Cents. of 1854, 1858, 1862, 1865, 1871, and 1873 specially recommended; Wheel Grenville and Treleigh Wood, also Wheel Peavor and Crebor shares.
Business transacted at the following rates of commission:—Foreign Stocks, 1/2 per cent.; and Mining Shares of 24 each and upwards, 1 1/2 per cent.; under 24, 1s. per share.

FERDINAND R. KIRK, STOCK BROKER,
5, BIRCHIN LANE, E.C.
Consols, Foreign Bonds, Railways, and every security quoted on 'Change bought and sold.
Bankers: London and Westminster, and City Bank.

SHARES WANTED:—
30 Cardiff and Swansea, 40 Lawe's Chemical, 200 Rica, 40s. 6d.
50 Diamond Fuel, 50 New Sharlston, 300 Javali, 40s. 6d.
50 Don Pedro, 50 Langdale Chemical, 90 Gold Run, 40s. 6d.
50 Chapel House, 100 Cleo Hill, 60 Malabar, 40s. 6d.
SHARES FOR SALE:—
30 Altami Colliery, 50 Hockley Hall, 40 Welsh Freehold, 40s. 6d.
50 Bilson and Crump, 200 Unit. Bituminous, 30 Thorp's Gawber, 40s. 6d.
25 Bagnall, John, 60 Glaisdale Whinstone, 40 West Mostyn Coal, 40s. 6d.
10 Cape Copper, 50 Whitehaven Iron (off. wanted), 10 Benhar Coal, 40s. 6d.

M. R. WILLIAM WARD
(LATE WARD AND LITTLEWOOD),
CROSBY HOUSE,
95, BISHOPSGATE STREET WITHIN, E.C.,
STOCK AND SHARE BROKER.

JOHN MOSS AND CO., STOCK AND SHARE DEALERS,
234 AND 235, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C.,
transact Business for cash or account on all descriptions of Stocks and Shares.
Bankers: The London and County Bank, Lombard-street.

M. R. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C. (Established 18 Years),
can sell the following SHARES, at prices annexed:—
40 Almada, 16s. 9d. 25 Flagstaff, 22 11s. 3d. 25 Russia Copper, 22 19s.
25 Bamfylde, 26s. 50 Frontino, 6s. 3d. 10 Richmond, 27 6s. 3d.
20 Bog, 10s. 6d. 50 Gold Run, 19s. 40 Prince of Wales, 10s.
20 Birdseye Creek, 22 2s. 20 Hington, 19s. 15 Sweetland, 22 9s.
15 Chicago, 23 1/2 20 Javali, 16s. 9d. 50 St. Patrick, 21 1/2 13s.
10 Colorado, 23 11s. 3d. 15 Linars, 24 3s. 30 Tecoma, 21 3s. 9d.
40 Crenver, 4s. 6d. 25 Marke Valley, 18s. 9d. 50 The Gold, 12s.
8 Cape Copper, 23 1/2 15 New Consols, 23 20 W. Tankerville, 23s.
50 Don Pedro, 14s. 6d. 15 New Quebrada, 24 1/2 10 Wheel Uny, 22 1/2
10 Eberhardt, 24 6d. 30 Parys Mountain, 14s. 40 W. Esqair Lie, 21s. 6d.
20 East Van, 30s. 6d. 10 Pennerley, 31s. 6d. 60 York Peninsula, 2s.
20 Emma, 21 1/2 60 Fort Phillip, 16s. 6d.

WILLIAM BARTLETT, STOCK AND SHARE DEALER,
FINSBURY SQUARE BUILDINGS, LONDON, E.C.
Business transacted in British, Colonial, and Foreign Securities, Railways, Bank, and Mining Shares at close net prices. The Sale or Purchase of Shares not quoted in the usual Stock and Share Lists may be negotiated.
Full particulars of a few Securities well worthy of immediate attention will be forwarded on application, free of charge.

G. E. SIMPSON, STOCK AND SHARE DEALER,
6, GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C., will
SELL the following SHARES, free of commission:—
40 Bog, 11s. 35 Hington, 19s. 3d. 40 Sweetland Creek, 22 1/2
40 Birdseye, 22 2s. 9d. 70 Javali, 17s. 30 S. Roman Grav., 21s.
75 Chapel House, 22 16 3 20 Ladywell, 22 13s. 9d. 70 St. Patrick, 21 1/2
20 Chontales, 2s. 6d. 25 New Quebrada, 24 11 20 Tankerville, 21 1/2
20 Chicago, 23 6s. 3d. 70 Old Trebutget, 7s. 6d. 15 Unit. Mexican, 22 1/2
15 Cook's Kitchen, 23 1/2 30 Pennerley, 31s. 6d. 50 Van Conso, 22 13s.
40 Don Pedro, 14s. 6d. 30 Parys Mount, 14s. 6d. 50 Van Conso, 22 13s.
25 Flagstaff, 22 1/2 35 Penstruthal, 12s. 6d. 20 W. Chiverton, 25 1/2
20 Gold, 11s. 3d. 20 Roman Grav., 21s. 6d. 25 Wheel Peavor, 25 1/2
40 Gold Run, 19s. 25 Richmond, 27 6s. 3d.

SPECIAL BUSINESS in the Fire Re-Insurance Corporation (Limited).

P. WATSON, STOCK AND SHARE DEALER,
79, OLD BROAD STREET, LONDON.
Bankers: The Alliance Bank (Limited); and Union Bank of London.

MR. ALFRED E. COOKE, STOCK AND SHARE DEALER,
76, OLD BROAD STREET, LONDON.
(Established 1853.)
SPECIAL BUSINESS in the following shares, which should be bought at once:—Chapel House, Glaisdale Quarry, St. Patrick, and Tankerville.
All the above shares are fully paid. Full particulars may be had on application.
Mr. COOKE can SELL the following shares:—
10 Altami Coll., 23 3 9 20 Don Pedro, 14s. 105 Positive Assur., 15s. 9d.
20 Bamfylde, 25s. 35 Glaisdale, 20s. 30 Pennerley, 21 1/2
25 Cakemore Colliery, 25 10 Iton Rhy., 50 Rookhope, 6s.
45 Chapel House, 24 1s 3 100 Javali, 16s. 9d. 30 St. Patrick, 22s. 6d.
10 Cedar Creek, 21 11s 3d 50 Parys Mount., 20 Tankerville, 21 1/2
50 Crenver, 30 Penstruthal, 10s. 6d.
Mr. COOKE is a Buyer of Chapel House, Glaisdale, Javali, and Tankerville at best market prices.
Applications received for the Burnwithan Fire-Brick and Fire-Clay shares.
Shares may be had for settlement at the end of May, subject to the payment of a deposit of 20 per cent.
References exchanged.
Prompt attention given to all letters and telegrams.

MR. T. E. W. THOMAS, SWORN SHARE BROKER,
3, GREAT WINCHESTER STREET BUILDINGS, E.C.
(Established 1857.)

The following are the latest prices at which business could be done. Where the difference between the buying and selling price is wide transactions may be effected at an intermediate price:—

Buyers.	Sellers.	Buyers.	Sellers.
Bamfylde, 27s. 6d.	28 1/2	Prince of Wales, 10s.	11s.
Birdseye Creek, 22 6s. 3d.	23	Richmond, 27 6s. 3d.	28 1/2
Bog, 12s.	13	Roman Gravel, 2s. 6d.	3s.
Chicago, 23 1/2	24	St. Ives Consols, 12	12 1/2
Chontales, 2s. 6d.	3s.	St. Patrick, 21 1/2	22
Devon Great Consols, 1 1/2	1 3/4	South Condurow, 4 1/2	4 3/4
Dolcoath, 24 6d.	25	So. Roman Gravel, 16s.	17s.
East Lovell, 24 6d.	25	Sweetland Creek, 2 1/2	2 3/4
East Van, 30s. 6d.	31	Tecoma, 26s. 3d.	27
Eberhardt, 24 6d.	25	Tankerville, 21 1/2	22 1/2
Flagstaff, 22 8s. 9d.	23	Tinnyard, 22	23
Gawton, 12s.	13	Tyldwy, 23 1/2	24
Hington Down, 7s. 6d.	8	Van Conso, 22 1/2	23 1/2
Javali, 16s. 9d.	17s. 6d.	West Chiverton, 5 1/2	5 3/4
Ladywell, 22 13s. 9d.	23	West Tankerville, 1 1/2	1 3/4
Llanrwst, 17s. 6d.	18s. 3d.	West Tolgus, 4 1/2	4 3/4
Marke Valley, 17s. 6d.	18s. 3d.	Wheel Peavor, 25 1/2	26
New Consols, 23 1/2	24	Wh. Kitty (St. Agnes), 4 1/2	4 3/4
Parys Mountain, 14s.	15s. 3d.	Wheel Peavor, 25 1/2	26
Pennerley, 31s. 6d.	32		
Penstruthal, 12s. 6d.	13s.		

MESSRS. PYNE AND ASHMEAD,
CITY MINING AGENTS,
LONDON MANAGEMENT OF COMPANIES UNDERTAKEN.
ACCOUNTS AUDITED, LIQUIDATIONS CONDUCTED.
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MR. HENRY CHAPMAN, STOCK AND SHARE DEALER,
WOOL EXCHANGE, COLEMAN STREET, LONDON, E.C.
(Established 20 years.)

Business transacted in every description of Securities including British, Foreign, and Colonial; also Railways, Banks, Insurance, Miscellaneous, and Mining Companies.
Holders of Mining Shares can obtain, free of charge, particulars of the exact position of any company they may be interested in.
All enquiries answered by return of post.
Capitalists seeking Safe and Profitable Investments for £100 to £1000 should apply for particulars, either personally or by letter, to Mr. CHAPMAN, who has several on hand that will bear the strictest investigation.

MESSRS. W. J. TALLENTIRE AND CO.,
STOCK AND SHARE BROKERS,
20, CHANGE ALLEY, CORNHILL, LONDON, E.C., transact business in
Stock Exchange Securities and Mining Shares; of every description.
A Selected List of Safe Investments forwarded to intending investors post free on application. Fourteen years' experience.

MESSRS. ENDEAN AND CO., STOCK AND SHARE DEALERS,
85, GRACECHURCH STREET, LONDON, E.C.
Government and every negotiable Stocks dealt in for cash or account. Orders and telegrams punctually attended to.
We advise immediate application and purchase of the BAMFYLD and Llanrwst shares. A rise in price is inevitable.

MR. THOMAS THOMPSON, JUN., 1, PALMERSTON BUILDINGS,
BISHOPSGATE STREET, LONDON, E.C.
Some valuable hints as to the purchase of mining shares will be found in Mr. Thompson's "Investment Circular" for April now ready, post free, price 6d.

M. R. W. TREGELLAS, 122, BISHOPSGATE STREET WITHIN, E.C.,
Deals in all descriptions of Stocks and Shares at close market prices.

MESSRS. HARLAND AND CO., STOCK AND SHARE DEALERS,
235 AND 236, GRESHAM HOUSE, LONDON, E.C.
Bankers: London and County Bank.

Messrs. H. and Co. wish to direct attention to the DIVIDENDS declared by CHAPEL HOUSE and ALLTAMI COLLIERIES, and will be happy to supply shares in these companies at market rates.
SPECIAL BUSINESS in Patent Ligno Mineral Paving Company.

MESSRS. HARVEY, JORDAN, AND CO.,
MINING ENGINEERS AND AGENTS, ACCOUNTANTS, AUDITORS,
MANAGERS OF PUBLIC COMPANIES, &c.
OFFICES:—30, MOORGATE STREET, LONDON, E.C.
LONDON OFFICE OF THE LANTERN TIT PLATE WORKS.
PLANET SILVER MINING CO. (Limited).
Mineral Properties Inspected.

MR. JAMES STOCKER, 2, CROWN COURT,
THREADNEEDLE STREET.
Railway, Bank, Foreign Bonds, and all other Stocks and Shares for Investment or Speculation.

SPECIAL BUSINESS in the following:—
100 Almada, 16s. 3d. 65 Glaisdale, 20s. 100 Rica, 4s. 9d.
50 Bamfylde, off. wtd. 50 Great W. Van, 11s. 40 Silkstone Fall, off. wtd.
5 Bellavista, off. wtd. 30 Groswin, 23s. 40 South Aurora, 11s. 3d.
35 Birdseye, 22 2s. 30 Hington, 19s. 55 So. Carr Bra, 23 9s.
25 Bilson & Crump, 21 10s. 15 Iton Rhy., 24s. 6d. 85 S. Prince Patrick, 22s. 6d.
75 Bog, 11s. 100 Javali, 16s. 9d. 30 So. Rom. Grav., 17s.
10 Cape Copper, 23 1/2 20 Lawe's Chem. 5 St. J. del Rey.
35 Cathedral, 40 Last Chance, 22s. 9d. 30 Thorp's Gawber, 21 1/2
40 Carn Brea, 24 1/2 40 Ladywell, 22 1/2 15 Tankerville, 21 1/2
50 Cedar Creek, 21 10s. 50 Malabar, 14s. 10 Tincroft, 22 1/2
45 Central Van, 16s. 6d. 50 Marke Valley, 19s. 6d. 40 Van Conso, 22 1/2
60 Chontales, 2s. 6d. 100 New Rosario, 5s. 9d. 45 Welsh Freehold, 22 1/2
20 Chicago, 23 6s. 3d. 45 New Sharlston, 20 Newcos. Chem., 24 1/2 55 W. Esqair Lie, 25s.
25 Cardiff & Swan., 24 1/2 100 Old Trebutget, 7s. 6d. 10 Wheel Uny, 22 1/2
75 Don Pedro, 14s. 6d. 55 Pennerley, 31s. 6d. 30 Wheel Peavor, 25 1/2
20 Devon Gt. Con., 31s 3d 30 Penstruthal, 12s. 6d. 10 Wheel Kitty, 23s.
50 Emma, 23s. 9d. 30 Prince Patrick, 22s. 6d. 30 Wheel Uny, 22 1/2
20 Eberhardt, 24 6d. 30 Prince of Wales, 10s. 10 West Basset, 25 1/2
20 East Lovell, 24 6d. 55 Port Phillip, 12s. 30 West Tolgus, 4 1/2
50 Flagstaff, 22 1/2 25 Rom. Gravel, 12 1/2 30 Wheel Peavor, 25 1/2
60 Frontino, 6s. 3d. 50 Rio Tinto, 22 1/2 100 York Peninsula, 2s.
70 Gold, 11s. 3d. 75 Richmond, 27 6s. 3d. 40 W. Tankerville, 22s. 6d.
70 Gold Run, 19s.

Bankers: London and Westminster.

M. R. CHARLES THOMAS,
MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MESSRS. A. W. THOMAS AND CO.,
10, COLEMAN STREET, E.C.,
MINING AGENTS, AND STOCK AND SHARE DEALERS.

St. Patrick Mining Company.—Prospectuses and plans may be obtained upon application to Messrs. A. W. THOMAS and Co.

SAFE AND PROFITABLE INVESTMENTS.
Dividends 5 to 10 and 12 per cent. per annum. Read

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Safe Investments in English and Foreign Railways, Preference and Debenture Stocks, Telegraph, Water Work, Gas, Dock, Insurance, Bank, Tramway, Shipping, Tea, Land, Mine, and Miscellaneous Shares, &c.; Foreign Loans, Bonds, &c.; Indian, American, and Colonial Stocks. Dividends, Reports, Market Prices, &c.

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100 WEST CHIVERTON. 125 LADYWELL.
500 EAST VAN. 10 DOLCOATH.
50 VAN. 50 ROMAN GRAVELS.
200 WHEEL CREBOR. 5 CARN BREA.
50 TANKERVILLE. 200 PENNERLEY.
100 WHEEL GRENVILLE. 150 WEST TANKERVILLE.
180 BOG. 500 PARYS MOUNTAIN.

Sellers will please state number and lowest price for cash on receipt of transfer.

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MESSRS. A. ENDEAN, FISHER, AND CO., STOCK AND SHARE DEALERS,
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Bankers: London and Westminster, Lothbury.

MESSRS. J. TAYLOR AND CO., 86, LONDON WALL, E.C.,
and MINING EXCHANGE, SOUTH KING STREET, MANCHESTER,
MINING ENGINEERS AND INSPECTORS.
Business done in all descriptions of Stocks and Shares.

NOTICE OF REMOVAL.
MR. E. CHARTERS, 36, NORTHUMBERLAND STREET, has
MOVED to 8, YORK BUILDINGS, CHARING CROSS, in consequence
of the house being required by the Board of Works.

MR. E. CHARTERS, 8, YORK BUILDINGS, CHARING CROSS,
LONDON, can do BUSINESS in the following SHARES, free of
commission:—
50 Almada, 15s. 6d. 25 Great West Van, 11s. 40 Pedra-an-drea, 27.
25 Bamfylde, 21 1/2 30 Gold Run, 16s. 9d. 70 Roma Grande, 2s. 9d.
50 Bronfloyd, 21 1/2 50 Marke Valley, 17s. 6d. 50 Trumpet Cons., 19s. 6d.
25 Birdseye Creek, 22 50 Malabar, 11s. 9d. 70 West Maria, 6s.
20 Cardiff & Swan., 24 10 Medlyn Moor, 25 1/2 10 West Basset, 23.
50 Devon Consols, 21 1/2 50 New Fowey Cons., 10s. 6d. 10 Wheel Kitty, 23.
15 Emma, 21. 30 New Sharlston, 23 1/2 30 Wheel Jane, 24.
70 Frontino, 7s. 6d. 30 Old Talargoch, 22 1/2 30 Wheel Uny, 22 1/2.
50 Gawton, 10s. 6d. 50 Plynnimmon, 3s. 9d. 5 West Tolgus, 4 1/2.
50 Glasgow Carad., 21 1/2 50 Pennerley, 21 1/2 20 Wheel Peavor, 25 1/2.

M. R. TIMOTHY HUGHES,
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The Registered Office of the PRINCE PATRICK, GROSVENOR, WEST
BRYN CELYN, CENTRAL FOXDALE, and GREAT EAST FOXDALE LEAD
MINING COMPANIES (LIMITED).
Full information respecting these Mines forwarded on application.

RELIABLE INFORMATION given respecting Mines in the Isle of Man, Flint-
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GOGINAN, ABERYSTWITTH.

M. R. R. PERCY ROBERTS,
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GROSVENOR, ENTWISLE, AND CO.,
(LATE GROSVENOR AND CO.),
STOCK AND SHARE BROKERS,
88, PORTLAND STREET, MANCHESTER.

WANTED.—A PRACTICAL MINE AGENT, of large Foreign
and Colonial Experience, DESIRES a RE-ENGAGEMENT as MA-
NAGER. Is thoroughly acquainted with metalliferous minerals and assaying.
Phosphate of lime deposits and analysis a speciality. Inspection of mining
properties undertaken, and estimates carefully made. A situation foreign preferred.
Speaks Spanish. Security if required.
Testimonials and reference by addressing in first instance, "Apatite," MINING
JOURNAL Office, 26, Fleet street, London, E.C.

WANTED.—The Advertiser desires a RE-ENGAGEMENT either
at HOME, ABROAD, or in the COLONIES. Is thoroughly acquainted
with the Assaying of Ores, both by the dry and wet methods, and has also some
experience of the Smelting and Dressing of Ores. Twelve years with last
employers, who are prepared to bear highest testimony as to character and ability.
Apply to Mr. THOMAS BOWEN, Brynhyfryd, Swansea.

BAMFYLD COPPER MINING COMPANY.
WANTED, FIVE HUNDRED BAMFYLD SHARES, in
exchange for other first-class shares.
Address, "X. Y. Z.," 9, Howard street.

MR. ERNEST DEACON, PONTPOOL, SOUTH WALES,
CIVIL AND MINING ENGINEER, AND SURVEYOR,
(Certificated) Mem. S. W. Inst. Engrs.

REPORTS AND INSPECTIONS OF MINING PROPERTIES, or AGENCY for
same. Machinery erected. Collieries managed, &c. &c. Surveys, surface or
underground. Levellings, &c., correctly executed, with dispatch. References.

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Only maker in the United Kingdom.

MR. JOHN CARTER, MINE SHARE DEALER,
CAMBORNE, CORNWALL, transacts business in every description of
shares at close market prices of the day.

Chilian Government Five Per Cent. Loan, 1875.

AUTHORISED BY LAW OF THE REPUBLIC DATED 12TH NOVEMBER, 1874.

£1,900,000, IN BONDS OF £1000, £500, AND £100 EACH.

REDEEMABLE AT PAR BY AN ACCUMULATIVE SINKING FUND OF TWO PER CENT. PER ANNUM BY SEMI-ANNUAL DRAWINGS.

PRESENT ISSUE, £1,000,000.

PRICE OF ISSUE, 88½ PER CENT.

THE ORIENTAL BANK CORPORATION, as Agents for the National Bank of Chili, duly empowered, and acting on behalf of the Chilian Government, hereby INVITE SUBSCRIPTIONS for £1,000,000 sterling of the above loan.

The loan will be represented by bonds to bearer for £1000, £500, and £100, bearing interest, until repayable under the operation of the sinking fund, at the rate of 5 per cent. per annum from the 1st day of March, 1875, with coupons attached, payable in London, at the office of the Oriental Bank Corporation, on the 1st day of March and the 1st day of September in each year.

An accumulative sinking fund of 2 per cent. on the entire nominal amount of the loan will be supplied by means of semi-annual drawings in the months of January and July in each year, the first drawing to take place in January, 1875. The Government reserves to itself the right of increasing from time to time the sum applicable for redemption of the bonds.

The bonds drawn will be payable on the 1st day of March and the 1st day of September next after each drawing.

The subscription price is £88½ per £100, payable by instalments, as follows:—
£5 on application.
10 on allotment.
20 on 2nd May.
20 on 1st June.
20 on 1st July; and
13½ on 3rd August, 1875.

£88½ per cent.

Allottees will have the option of paying up in full on allotment, or on any of the above dates, under discount at the rate of 2½ per cent. per annum.

In default of payment of the respective instalments at their due dates, all previous payments will be liable to forfeiture.

Applications must be made on the accompanying form, but no application will be entertained unless accompanied by a deposit of 25 per cent. on the nominal amount of the bonds applied for.

Where no allotments are made the amount deposited will be returned. In cases of allotment any excess of deposit will be applied in whole or part, as the case may be, to the payment of the 10 per cent. due on allotment.

Receipts to bearer will be exchanged against allotment letters and bankers' receipts as soon as possible.

By the law of 12th November, 1874, the amount of £1,900,000 is authorised to be

raised on the special security of the Government railways from San Fernando to Palmilla, and from San Felipe to Santa Rosa de los Andes, and of the Great Mole and Bonded Stores at Valparaiso, as well as on the general security of the income and property of the State. The present issue of £1,000,000 is to be applied to the redemption of internal debts for public works, and the balance of £900,000 is to be applied to the redemption of the Seven per Cent. External Loan of 1874.

The official documents authorising the loan, with translations, lie for inspection at the offices of Messrs. MURRAY, HUTCHINS, and Co, Solicitors, 11, Birch Lane, London.

Bonds signed by His Excellency Don Alberto Bost Gana, Envoy Extraordinary and Minister Plenipotentiary of the Republic of Chili in Great Britain and France, duly empowered as Special Commissioner of the Chilian Government, will be provided with all possible dispatch.

Forms of application can be obtained of the Oriental Bank Corporation; of Messrs. STEER, LAWSON, and CURTIS, 51, Threadneedle-street; and of Messrs. J. and A. SCRIMGEUR, 18, Old Broad-street, Brokers.—London, 31st March, 1875.

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GENTLEMEN,—I herewith enclose a cheque for the sum of £ being a deposit of £5 per cent. on of the Chilian Government Five per Cent. Loan of 1875, and I request you will allot me that amount of the said loan, and I engage to pay up the further instalments on that or any smaller amount you may allot me, on the terms of the prospectus of the of March, 1875.
Signature
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Registration of New Companies.

The following joint-stock companies have been duly registered:—

WESTON IRON COMPANY (Limited).—Capital 75,000£, in 5£ shares. To carry on business as iron miners, smelters, and manufacturers. The subscribers are—J. Irving, Eskdale-Birkdale, Southport, merchant, 50; Charles Wigg, 6, Water-street, Liverpool, alkali manufacturer, 50; A. P. Fletcher, 24, Fenwick-street, Liverpool, 50; G. L. Wigg, Runcorn, Cheshire, alkali manufacturer, 50; J. Kennedy, Cressington Park, Liverpool, civil engineer, 50; Thomas Vickers, Liverpool, merchant, 50; and A. Shand, Liverpool, merchant. Messrs. J. Kennedy, J. C. Irving, J. V. Bird, and Charles Wigg will be the first directors, the qualification being 25 shares.

ABERFOYLE SLATE AND SLAB COMPANY (Limited).—Capital 20,000£, in 5£ shares. The acquisition of the Aberfoyle Quarry, at Aberfoyle, Perthshire, is intended by this company, in pursuance of an agreement made between T. S. Nicholls, of Corris, Machynlleth, North Wales, and W. H. Sennett, of 29, Park-street, Peckham Rye, as nominee of the company. The price to be paid for the property is 3000£ in cash and 1000 fully paid-up shares. The subscribers are—John Argall, Towcester, mining engineer, 1; J. H. Sennett, Wheatley, mining agent, 1; G. Hammis, Towcester, builder, 1; W. P. Turner, Chesterfield Villas, Clapham, surveyor, 1; J. J. Aris, 29, Fenchurch-street, consulting engineer, 1; J. E. Beales, York-street, Portman-square, of no occupation, 2; and W. White, 25, Finsbury-place, professor of chemistry, 2. Mr. T. S. Nicholls will be general manager, and Mr. W. J. Sennett, of 7, Allhallows Chambers, E.C., will take the London management of the company.

LONDON MASONIC CLUB COMPANY (Limited).—Capital 50,000£, in 5£ shares. To establish masonic clubs in England. The subscribers are—J. R. Stead, 39, Great Tower-street; T. J. Smith, Ivy House, Brixton Hill, 5; G. Boor, Stoke Newington, 5; H. Matthew, 3, Woodbury Vale, Stoke Newington, 5; J. P. White, 14, Alexandra Villa, Finsbury Park, 5; T. A. Rumpff, 32, Lime-street, 5; G. W. Wright, Alwyne-road, Canonbury, 1.

INDIA MILLS (Darwen) COTTON SPINNING COMPANY (Limited).—Capital 200,000£, in 5£ shares. To acquire the India Mills, at Over Darwen. The subscribers are—E. Shorrocks, Darwen, 2000; R. Eccles, Lower Darwen; W. Swape, Darwen, 1000; J. Shorrocks, Manchester, 5000; J. Eccles, Darwen, 500; F. Eccles, Darwen, 1000; and R. S. Ashton, Darwen, 2000.

CITY OF MANCHESTER LAND, BUILDING, AND INVESTMENT COMPANY (Limited).—Capital 20,000£, in 5£ shares. The subscribers to this company (who take 20 shares each) are—T. Lythgoe, Portland House, Heaton Chapel; J. Redson, 37, Piccadilly, Manchester; T. G. Backhouse, St. James-square, Manchester; J. B. Midgeley, Elizabeth-street, Cheetham; J. Higginbottom, Heaton Chapel; R. K. Payne, Ardwell; and M. Wood, Eccles.

SAFETY OIL COMPANY (Limited).—Capital 50,000£, in 5£ shares. To acquire the business of Messrs. Tudor and Son, which firm have, with the assistance of Mr. F. M. Strange, been engaged in the manufacture and sale of Strange's Oil, &c. The subscribers are—H. W. Carter, 21, Billiter-street, 300; H. Cooper, 4, Cannon-street, 300; E. S. Tudor, College Hill, E.C.; W. Tudor, College Hill, 300; A. S. Tudor, 27, Leadenhall-street, 50; G. R. Carter, London-street, 5; and T. M. Strange, 17, College Hill, 1.

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LONDON AND KANSAS LAND AND COLONISATION ASSOCIATION (Limited).—Capital 50,000£, in 10£ shares. To acquire land along the line of the Kansas Pacific Railway, and elsewhere in Kansas. The subscribers (who take one share each) are—R. J. St. Aubyn, 7, Ravensworth-terrace, Fulham; G. F. Gattie, 8, Walham Green, Fulham; T. Hodgson, 13, Spencer-road, Wandsworth; W. C. J. Blount, Grosvenor-road, South Norwood; A. Macdonald, 124, Ken-

nington-road; F. W. Green, Shaftesbury Villa, Wandsworth; G. E. Shepherd, Kennington Park.

SAMUELSON PAPER MILL COMPANY (Limited).—Capital 25,000£, in 5£ shares. To acquire a paper mill at Samuelson, Lancashire. The subscribers are—E. Knowles, Over Darwen, 100; J. Watson, Blackburn, 100; E. Hamer, Blackburn, 100; J. Ingram, Blackburn, 10; E. Ruston, Blackburn, 50; T. Abbott, Blackburn, 200; T. J. Hargreaves, Blackburn, 100.

BAILEY BROTHERS WHOLESALE AND FAMILY SUPPLY ASSOCIATION (Limited).—Capital 15,000£, in 5£ shares. To acquire the business of Bailey Brothers, at Clitheroe, Lancashire.

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PORTABLE ENGINES IN THE MINING DISTRICTS.—The so-called double-puffer (Clayton and Shuttleworth's) engine, sold on March 15, at the Florence Consols, realised the very satisfactory price of 280£,—actually more by 20 per cent. than the original price.

CORNISH PUMPING ENGINES.—The number of pumping-engines reported for Feb. is 14. They have consumed 1532 tons of coal, and lifted 11,700,000 tons of water 10 fms. high. The average duty of the whole is, therefore, 51,400,000 lbs., lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Crenver and Wheel Abraham—Sturt's 90 in.	Millions	53.8
Ditto ditto —Pelly's 80 in.		52.4
Ditto ditto —Willyams's 70 in.		67.1
Dolcoath—85 in.		61.5
West Basset—Thomas's 60 in.		61.2

LEAD MINING IN DURHAM—THE EDMONDBYERS DISTRICT.—The cutting of the rich vein of lead ore at Swandale by the Hexham and Edmondbyers Mining Company, Limited, has been the cause of much excitement in the immediate neighbourhood, and also in the towns of Hexham and Newcastle, where, we believe, the shareholders chiefly reside, and from which towns numbers of people have visited the scene of operations. We understand that the company's shares have changed hands at almost fabulous prices, and those now obtained would show that the value of the mine is 80,000£. It is, we believe, the intention of the directors to push on the operations at the mine with vigour, dressing floors and machinery for preparing the ore for market will be proceeded with at once. It is the opinion of practical men that the mine will bear still better at a lower depth than that already attained. It is intended to put in a powerful steam-engine for pumping and winding purposes. This will admit of the mine being sunk to a lower level, when no doubt the anticipations of the company will be fully realised. We are informed that the ground on the south side, immediately adjoining the above-named company's operations, has been taken by a party of local gentlemen, and that they have already commenced operations on the course of the same vein. It is generally thought that this vein is the same as that being wrought by the London Lead Company, at Bollhope, where it is 5 feet wide, and rich in ore, the output during last year amounting to something like 2800 tons. Thus, with Swandale, on the north, and Bollhope on the south, the new company's undertaking at Harehope Gill can hardly fail to be successful.—*South Durham and Cleveland Mercury*.

STEAM AND FUEL.—Messrs. JONES and WHITE have patented an improved method for economising fuel and water in the production of steam, the novelty of which consists in an auxiliary for the production of steam, and the saving of fuel and water in the working of engines. Their method consists in, or drawn direct from the boiler, to be again introduced into the water contained in the boiler, thus driving off an increased volume of steam, this steam being partially and continually used for the purpose of heating the water and partially for driving the engine; for example, the steam from the exhaust pipe, with or without an additional supply from top of boiler, is passed through a pump which forces it into the bottom of the boiler.

Lectures at the Royal School of Mines.

LECTURES ON MINERALOGY.—No. VI.

The sixth and concluding lecture of this course, delivered by Prof. W. W. SMYTH, was on FELSPARS, AND THEIR RESULTING CLASSES. Last week, said the lecturer, I endeavoured to lay before you, in the short time we had at our disposal, some facts connected with the important substance which in chemical language is called silica, and in mineralogy is termed quartz, from an old German word; and under this term we found many different looking substances are included. I mentioned then that the silica, which is present in the materials of the crust of the earth to the proportion of 50 or 60 per cent., did not all occur in the form of quartz, but that in great part it was silica in combination with other substances, and to these different compounds the general name of silicates is given. These silicates are very numerous, and differ from each other in many other characteristics besides that of chemical composition. My object to-night is to deal with two or three of these silicates, or combinations of silica with different basic materials, which are noticeable for the important part they play in the social relations of mankind. Every one is more or less familiar with the various forms of quartz known as Bristol diamonds, Irish diamonds, Cornish diamonds, or with the Brazilian pebbles used by the optician; but we are apt to lose sight of the quartz and silica in many of its forms. Thus, we do not observe that it is quartz which gives solidity to our houses, sheds the rain off our roofs, meets us in the mud which encumbers our feet in winter, or flies in our eyes in summer, and which, moreover, constitutes the cups and saucers, plates and dishes, of our daily life; yet such is the case.

The mineral to which I have especially to refer we will speak of under the familiar name of "felspar," the term felspar, like many other mineralogical names, being derived from the German, and means a sparry or shiny substance, constituting an important part of rocks. This felspar crystallises in the oblique system, and the crystals can very frequently be seen embedded in the porphyritic granites from Cornwall and other places—e.g. some of that used in London. Faces of the crystal which at first sight appear to correspond exactly will, on examination, be found to differ slightly, and in many instances these differences alone will be sufficient to show you that you have a crystal of the oblique system to deal with. The first variety of which I have to speak exhibits a very distinct cleavage in two directions, producing faces at right angles to each other; on this account it is known as "orthoclase" felspar. As a class felspars have no very great degree of hardness or specific gravity; they are about two-and-a-half times as heavy as water, and will allow, though with difficulty, of being scratched with a steel knife. As regards fusibility it is somewhat obdurate; with a very strong heat you may melt it at the corners, but not with facility. When the chemist examines into the composition he finds them to consist in great measure of the silicate of alumina, the alumina being in comparatively small proportion. The alkali potash, which is of great importance in the arts and in agriculture, is present in orthoclase in considerable quantity; in some kinds part of the potash is replaced by soda. The following table shows the general chemical composition of orthoclase, and of some of the other varieties of felspar of which I wish to speak:—

	Adularia.	Albite.	Oligoclase.	Labradorite.	Anorthite.
Silica	64.7	68.6	64.6	52.9	43.4
Alumina	18.4	19.6	22.1	30.2	36.9
Lime	—	—	—	12.3	19.7
Potash	16.9	—	—	—	—
Soda	—	11.8	18.3	4.6	—
	100	100	100	100	100

Among the varieties of this orthoclase is one named "adularia," from a mountain near the St. Gothard, where it occurs; the name is given to those varieties of orthoclase which are either free from colour or of very light tints, and as a rule there is a great deal of translucency connected with this. In some cases, as in this specimen from Ceylon, there is a beautiful play of light on the surfaces, and then the name "moonstone" is given to it. Another variety, which has been sometimes employed for ornament, is that with a bright-green tint—"amazon stone"—which is found in some parts of Siberia, usually in small pieces, but occasionally in large crystals. The name moonstone reminds one, again, of the variety termed "sunstone," of a yellowish brown tint, but exhibits a multiplicity of shining points, apparently due to the intervention of some foreign substance: the effect can only be seen satisfactorily when the light is reflected at a certain angle. Orthoclase felspar is one of the constituents of granite, colourless, or of a brownish tint. The old geologists used to imagine granite to be the bottom rock of all, the oldest, and in many cases it is difficult to show that there is anything older. The fact seems to be this, that granites have been formed at times beginning from the earliest down to others quite recent. This kind of felspar occurs also in another somewhat similar rock, which is called "gneiss," and which is composed of the same three minerals (quartz, felspar, and mica) as granite, but presents a more or less laminated appearance, somewhat like stratification. It appears not unlikely that in some cases originally stratified rocks, on account of chemical change, and their position in the earth's crust, have assumed this crystalline form. If the granite rock has large and conspicuous crystals scattered through it, it is called a "porphyry." There are grey, pink, and black porphyries; the latter contains a dark mineral (hornblende), and the quartz has likewise a dark tint. Another point worth attention is that the felspars, throughout whole districts, present decided colours; thus, it may be grey, white, or fleshed, or salmon red: the red varieties are rare in the southern counties, but everyone in London is familiar with those brought from Aberdeen; the difference is due merely to the presence of a somewhat considerable proportion of oxide of iron. In "graphic granite" there is a great contrast between the pale buff colour of the felspar and the dark, almost black, tint of the quartz; and this, coupled with the fact that the quartz in taking up its position has been compelled to follow certain faces of the felspar, has given rise to the name "graphic granite," from its fancied resemblance to Hebrew or other characters. Another variety of felspar is termed "glassy felspar," or "sanidine," which occurs embedded in rocks of an otherwise almost uniform character, such as those the geologist calls "trachyte." I mention this particularly because it occurs in large quantities on the banks of the Rhine (the specimen I have brought from that district), not far from that portion where the hill scenery of the Rhine commences. A very large portion of Cologne Cathedral is built of this rock. It is interesting to note that this mineral likewise occurs in volcanic rocks, and in Prussia distinct crystals of felspar have been formed in the bottom of a furnace, so that in spite of the objections which have been made it is undoubtedly the fact that, in some instances at least, felspar crystals have been produced by solidification from a state of igneous fusion. No place is more remarkable for crystals of felspar than some lofty granitic mountains in the West of the Isle of Elba. In the North of Italy a kind of pink granite occurs, one of the most beautiful in the world, remarkable for the facility with which it splits in certain directions: in some of these parts large slabs of it may be seen set up as telegraph posts.

The second variety of felspar I have to mention is that called "albite," from its general whiteness: the chemist has made out several varieties of it, but there are two or three general characters I wish to point out. In the first place, it is not found crystallised so plentifully as orthoclase, and when it does occur crystallised it is in the doubly oblique system, and therefore has no right angle. The most noticeable facts with regard to its composition are that it contains a rather larger proportion of silica than the last, and that soda replaces potash. Usually its crystalline forms are very complicated, from its tendency to assume the form of twin crystals. You may often see the effect of this in the crystals cut across in granite, one half of the crystal appearing bright the other dull. The third variety, "oligoclase," occurs in Sweden, Norway, Finland, and other northern countries, and also in those blocks scattered over the greater part of Germany in the glacial epoch. "Labradorite," or lime felspar, receives its name from some being found near Labrador; on being sliced across and polished it exhibits a most wonder-

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ful play of iridescent colours, which follow certain directions in the crystals. Brewster showed that it was due to a kind of cellular structure of the mineral. It is met with in several parts of Europe (Scandinavia, &c.), and occurs in basalt and dolerite rocks.

The last variety of felspar I have to mention is "anorthite," and on reference to its composition you will observe that the proportion of silica has very much diminished, while that of alumina has increased, and lime takes a very important part in its composition. This latter fact is very interesting, because this substance, anorthite, is presented to us so distinctly as one of the substances entering into the composition of modern lavas. I have here a specimen from a very recent eruption of Vesuvius. It is very interesting to know that there is a definite relation running through these substances; thus, whilst the proportion of silica present varies considerably, it is found that the amount of oxygen in the alumina is just three times as great as that in the other elements (lime, &c.) besides the silica.

Orthoclase felspar is one of the most important, and often the principal, constituent of granite rocks. From this condition it has sometimes undergone such changes as to appear quite a different material. In Cornwall, and especially scattered about the moors, you may meet with what is called Cornish stone, or China stone, and which is really a kind of granite, so soft as to smear paper, in which the felspar has no longer the hardness it ought to have, but will more or less readily fall to powder, and in which also the felspar will not so strongly reflect the light, and hence the stone has a dull appearance. In this condition it is very suitable for use in the potteries, and 50,000 tons of this material are annually sent away from Cornwall. There is another variety, in which the decomposition has gone still further, and in which the substance is more or less in the form of a powder; in both these cases quartz is still present. The powder into which the felspar falls, or can be disintegrated by a knife, is seen under the microscope to be made up of minute laminae, which slip over each other with very great ease; the name of "kaolin" is given to this. In some parts the decomposition has gone on so extensively that on digging below the soil to where you would expect to come on to hard granite rock, you find that you can easily dig it up by shovelful, it is so soft. The people in these districts have a very simple method of separating the felspar from the quartz which is mixed with it. They take a stream of water flowing over this rock, and lead into narrow wooden troughs, where it is allowed to stand for a greater or less time, and then it is led on step by step through other troughs and pools, where, after the mica and quartz are deposited, the milky fluid gradually deposits the felspar in the form of fine white kaolin, entirely free from quartz. A similar kind of kaolin powder is found in Saxony, and was first brought into notice in a curious way—by being used in a hairdresser's shop in that district for the hair. It was afterwards employed for the manufacture of the celebrated Dresden china. In Cornwall I hope we possess the kaolin in almost unlimited quantity. During the time that I have been associated with that county I have seen great progress in the work. Of the china-clays of first and second quality 150,000 tons are now annually worked.

NOTES ON THE ORE DEPOSITS OF CORNWALL—No. I.

By HUGO COOKESLEY, Author of "Practical Assayer."

[Prof. Von Cotta, of Freiberg, is the author of the best modern treatise on ore deposits, and in his work he has an interesting section devoted to Cornwall. The substance of these remarks I propose giving to the readers of the *Mining Journal* previous to particular descriptions of Cornish mining property.]

Nearly the whole of Cornwall consists of what miners call "killas," by which they mean all slate rocks not belonging to granite or elvans; under this term, then, we must include hornblende-schist and various kinds of greenstones. As regards the age of these rocks, all we can say is that they belong to the Palaeozoic period, and from the fact that only rare and imperfectly preserved fossils have been found in them we may consider that most of them belong to the Devonian. Out of this slate district there protrude five large masses of granite, and several smaller ones, and the slate itself, as well as the granite, is traversed by numerous porphyry dykes, called *elvans*, by some trap-dykes, by copper and tin lodes, by a few veins of ferruginous quartz, and clay fissures. Nearly all these veins occur in or near the granite, while other ores, especially lead, occur at some distance from the granite. This may be taken as a general description of the geological formation of Cornwall. The so-called "killas" is composed principally of greenish clay-slate and its varieties, with subordinate sandy layers; the nearer it is to the granite the more compact it becomes, and at the point of contact it passes gradually into crystalline schistose rocks, as chlorite-schist, mica-schist, gneiss, tourmaline, hornblende, &c. The planes of the slaty cleavage dip generally from the granite, and so the layers of slate are generally seen mantling in an irregular form round its flanks. The dip, however, is not generally so rapid as that of the granitic mass beneath at the point of junction; this latter is about 45°, while the former rarely exceeds 30°. The dip is not generally uniform for any considerable distance, which is owing to the irregular depth of the laminae of the slate, and not to mechanical displacement. As above stated, these slates are not only altered in their character the nearer they approach the granite, but are also traversed by thin veins containing mica, felspar, garnet, topaz, and cassiterite, &c. Fossils are found but very rarely in these rocks, and even when found are in such an imperfect state that we can gain no information from them about their period. The granite is generally coarse-grained, often porphyritic, and sometimes contains twin-crystals of felspar. Tourmaline, chlorite, and talc alternate irregularly with one another, and form ramifications from the granite into the slates beyond. The above-mentioned granitic masses expand under the slates beds at a greater dip or angle than the latter, and most probably unite with each other at a great depth. It is evident that the granite is of more recent origin than the slates which are overlying them, from the fact that the granite sends out numerous vein-like ramifications into the slate, and also that the granite itself contains fragments of slate. These ramifications are most numerous near the point of contact, and are usually only a few inches broad, but those that extend any distance into the slate are usually much wider. Sometimes we find narrow granite dykes traversing the granite itself; these dykes are nearly always fine-grained, and contain but little mica, but not unfrequently, as accessories, apatite and copper pyrites. In fact, the whole masses of granite are traversed by narrow strings intersecting each other, containing mica, apatite, cassiterite, quartz, and even trifling quantities of red copper. The *elvans* are porphyry dykes, vary greatly in their composition, and traverse both the granite and the slate. They are principally composed of a compact felsite, in which crystals of felspar, mica, tourmaline, &c., are distributed. Near the selvages, however, the crystals are usually wanting, and moreover fragments of the wall rock sometimes occur in the *elvans*. Henwood says that the mass of them is composed of felspar and quartz when traversing the slates, and of felspar and mica when traversing the granite. These *elvans* have been largely worked for the minerals which they contain in irregular masses or veins, consisting of iron and copper pyrites, and tinstone. Their breadth varies from a few feet to 70 fms. Their strike is nearly always north-east south-west; their dip from 40° to 60°, and more of them incline to the north than to the south. According to the Ordnance Geological Map of Cornwall, some of these *elvans* are only ramifications of the granitic mass; for instance, at Blandist they appear to have cooled off more rapidly than the main portion, and to have hardened porphyritically, but the greater number shoot out of the slate into the granite. They are evidently younger than the main mass of granite, though not very much so, and it is probable that they were formed, like the granite dykes, from a still fluid under region at a time when the upper region or surface had solidified; but those *elvans* that extend from the slate into the granite are most probably contemporaneous formations. They are all older than the carboniferous period, but more recent than some tin lodes, since these latter are intersected by *elvans*, and in part faulted by them.

When slate comes alongside of a lode it is often perceptibly

hardened. Trap dykes are only found, as a general rule, in laminated rocks, and run parallel to the stratification. The ore deposits of Cornwall may be divided into two general classes of tin and copper. The tin deposits may be divided into—1. Tin floors.—2. Tin stockworks.—3. Tin lodes.—4. Stream works. Tin floors are portions of rock that are traversed by stanniferous beds. Some hold the opinion that they were formed at the same time as the enclosing rock, but it is more probably the case that they are impregnations filling fissures in the rocks. In the Grillsbunny Mine they formed a zone 70 ft. broad in hornblende schist, and in the Botallack Mine there was a tin floor 18 in. broad. Tin stockworks are a combination of numerous small strings of ore. The granite in the Cardace Mine was traversed by a large number of these strings more than 6 in. broad, consisting of quartz, tourmaline, and cassiterite. The veins in St. Michael's Mount, near Penzance, which contain many other minerals besides tinstone, are stockworks. These formations occur more frequently in the *elvans* than in the granite. In the Wherry Mine there was an *elvan* several feet in breadth, traversed by several strings of quartz and cassiterite, from 1 in. to 9 in. broad. Tin lodes traverse the killas, the granite, and the *elvans*, more especially near the boundaries of the granite districts; the age of the tin lodes is variable, as will be proved hereafter. The stream-works occur in valleys near St. Just and St. Austell principally. We will consider them more fully later on. The copper ores which pay for working occur only in veins in the *elvans*. There are three classes of copper lodes proper—1. Copper lodes coursing east and west.—2. Those coursing south-east and north-west or north-east and south-west.—3. Younger or more recent lodes. Besides these there are other veins filled with clay or quartz, or both, which are generally called cross-courses, flookans, and slides. The cross-courses are for the most part composed of quartz, and intersect all veins they meet except the youngest copper lodes. They occasionally contain ores. Flookans are sometimes 8 or 10 ft. broad, and are veins filled almost entirely with clay, but usually are only narrow clefts coursing north and south and dipping in east. They intersect all other fissures and veins except the slides. The slides never exceed a foot in breadth. They have only been as yet discovered in the slate, and intersect schistose rocks only. There has never yet been a well-marked slide discovered in the granite. They are filled with softish clay of similar composition to the rocks they traverse. The different ages of the rocks and veins here mentioned are in the following order:—1. killas; 2. granite; 3. *elvans*; 4. tin lodes; 5. most of the copper lodes; 6. cross-courses; 7. younger copper lodes; 8. flookans; 9. slides; 10. stream works. We will now, after this general review of the ore deposits and rocks of Cornwall proceed to describe those kinds most important to the miner.

THE COAL FIELDS OF NEW SOUTH WALES.

We have been favoured by the Government Examiner of Coal Fields, Mr. JOHN MACKENZIE, F.G.S., with a copy of his official report for 1873, just issued, "On the Condition and Prospects of the Coal Fields, together with the Reports of the Inspector of Collieries on the State of the Various Coal, Petroleum-Oil-Cannel Coal, and Kerosene Shale Mines in New South Wales and Accidents therein." He remarks that the year was one of unexampled prosperity, and one that will be long remembered by the colliery proprietors and their workmen on account of the rise in the price of coal, rise in wages, and the agreement entered into by the Associated Masters and the officers and delegates of the Coal Miners' Association of the Hunter River district, by which the wages to be paid for heaving (hewing?) coal, and other work usually done by the miners, the hours of labour to be observed at the different collieries, and the mode of settling any dispute that may arise in reference thereto are to be arranged. In the Newcastle district the quantity of bituminous coal used for steam, household, smelting, gas, blacksmith's, and coking purposes raised was 1,014,224 tons, of the value of 581,101*l.* in 1873, against 853,716 tons, of the value of 340,973*l.* The Australian Agricultural Company, Co-operative, Wallsend, Waratah, Lambton, and New Lambton are all working the same seam of coal, which varies from 9 to 12 ft. in thickness. It is a bright bituminous coal, and the specific gravity of it varies from 1.2 to 1.326. In the Anvil Creek, Greta, Four-mile Creek, Mount Wingen, and Rix's Creek districts the total quantity of splint and bituminous coals suitable for steam, household, gas, smelting, blacksmith's, and coking purposes raised was 31,280 tons, of the value of 17,351*l.* in 1873, against 23,258 tons, of the value of 4023*l.* in the preceding year.

The Anvil Creek and Greta Collieries are now being worked on a large scale. Mr. Mackenzie reports that they produce a very bright splint and bituminous coal, the specific gravity of which varies from 1.2 to 1.33, and it has for many years been in great repute as a very excellent house-fire and steam coal. These seams of coal belong to the lower New South Wales carboniferous formation, and have marine fossil fauna above and below them, and dip at an inclination of about 1 in 6 to the west. A deep shaft, he continues, is now being sunk by the Greta Company, which will add another to the many proofs we have of the errors Prof. McCoy and Mr. Brough Smyth, F.G.S., of Victoria, have made, and which they still keep persistently proclaiming to the world, as to the age of our New South Wales coal fields. In a commercial point of view it is of very little consequence whether our coal belongs to the Mesozoic, Triassic, Permian, or Carboniferous formation, but to geologists and others it is of the greatest use that the truth should be told; and it is very much to be regretted that such erroneous views should be promulgated by those who have never seen the New South Wales coal fields, and who, from the position they hold, and the works, &c., they compile, are in other parts of the world looked upon as reliable authorities in such matters. It has now become generally known that we have coal and petroleum oil canal coal equal to any in the world, yet we find that when Prof. McCoy was examined before a Select Committee in Victoria, in 1857, that he said as follows:—"Supposing I was asked my opinion as to scientific prospects of the coal fields here, I would then say that the two great deposits of coal known to geologists are of two very different geological ages, and nearly all the opinions which are prevalent amongst geologists touching coal fields, and nearly all the opinions which influence commercial men as to the commercial value of coal fields, are founded upon the coal fields of the older formation of England, the continent of Europe, and parts of America. Such coal fields do not exist in this country, that is a point I wish clearly to show, and it is one that I think has never been clearly shown to this committee before."

Such old, valuable, and extensive coal fields of steady yield do not exist in this colony. The coal fields of Australia and India belong to a much newer geological period, and have not this very reliable and valuable character on which the commercial and geological opinions touching coal fields generally have been based. Now, as scientific men, we would say that if you expect a very great coal field at Cape Patterson it will not be one comparable with these old and valued coal fields, which are very inferior in the quality of the coal to the old English and European, and some of the American coal fields, which belong to what geologists call the Palaeozoic period. That is the reason why the expectations of scientific men as to the coal to be found at Cape Patterson are not so high as might be supposed. But the scientific point is this—that as a geologist I would point out that, instead of expecting such a great, extensive, and valuable coal field as the coal fields of England, you have no scientific reason for expecting anything superior to the Sydney coal fields, New South Wales; that would be a coal field of what geologists call the Mesozoic age, not at all the age of the old coal fields of England, and the coal deposits of this newer age are never so satisfactory as the older ones. Do you contend that the Mesozoic coal fields are not suitable for the different purposes of commerce? (Prof. McCoy:) They are not so suitable as the Palaeozoic, they are not so extensive, the beds are not so thick or workable, nor is the quality so good over any workable area. If a coal field at Cape Patterson was discovered equally good with the Sydney (New South Wales) coal fields, would you consider it worth working? (Prof. McCoy:) My individual opinion is that it would not be worth working. Mr. Mackenzie merely referred to this to show the slight reliance that people in other parts of the world should place on Prof. McCoy's

and Mr. Brough Smyth's statements as to the commercial value and age of our New South Wales coal fields, because it has now become an acknowledged fact that we have petroleum oil canal coal as rich or richer than any yet found in any other part of the globe, and very thick and extensive seams of bituminous, splint, and cannel coal equal in value to any yet found elsewhere. Prof. McCoy's reputation as a paleontologist is unquestionable, and if he were a "field geologist" he would never have committed himself to the opinions he has expressed respecting the New South Wales coal measures without a personal examination, when they are in direct opposition to those of geologists and other competent persons who have carefully examined and described them.

At Catherine Hill Bay, near Lake Macquarie, splint and bituminous coal is produced, New Wallsend Colliery, yielding 400 tons, worth 380*l.* This is a new mine, opened out by Mr. Thos. Hale, in the cliffs facing the Pacific Ocean. It is situated about 50 miles north of Sydney Harbour, and a jetty has been constructed from the entrance to the seam of coal out into the sea, of a somewhat similar nature to that on the sea-coast at Bulli, in the Illawarra district. It is now formed into a company, and the coal is sent away in steam colliers to different parts of the world. The seam of coal now being worked at this colliery is 14 ft. in thickness, has an excellent rock roof and floor, and dips at an angle of about 3°, or 1 in 20, to the west. The upper part of the seam is a splint coal of gravity about 1.380, and the lower part a splint and bituminous coal. The specific gravity of specimens tested from the outcrop is 1.33. This seam of coal outcrops in the cliffs at such a height over the level of the sea as to enable the owners of the mine to run out a jetty into the sea from the mouth or entrance to the seam of coal, and steam colliers come and take away the coal from the wagons filled by the men heaving the coal in the mine.

Adjoining this mine on the north Messrs. Brown, Lamb, and others have taken up a very large extent of coal land, containing the same seams of coal as are to be found on the new Wallsend Coal Company's property. They intend either to work the coal from under it themselves or to form it into a company, and their present intention is, Mr. Mackenzie believes, to run out a jetty and ship the coal at the entrance to Reid's Mistake. On the south of the New Wallsend Colliery, Messrs. Pope and Hardie, and Mr. Hargraves and others, have taken up large tracts of land containing the same seams of coal, and he is informed that they intend to form them into companies, and construct a tramway and ship the coal at Cabbage-tree Harbour. Inside Lake Macquarie Heads the Hon. John Robertson and others have secured large areas of mineral land with thick and good seams of coal on them, which they inform him they intend to work very shortly.

In the Illawarra district, where a semi-bituminous coal is raised, the quantity got was 137,063 tons, of the value of 62,889*l.* in 1873, against 123,681 tons, of the value of 48,780*l.* There were also 2750 tons of American Creek petroleum oil shale, of the value of 4125*l.*, made into oil at the works. No new mines have been opened out and worked in this district during 1873, but very large areas of coal-bearing land between Port Hacking and the Shoalhaven river have been taken up and secured for the purpose of forming companies to work the seams of coal existing thereunder, and there is no doubt that in a few years many other mines will be worked in these districts, especially if the South Coast Railway now being surveyed is constructed.

In the Western district, at Hurlley, Lithgow Valley, Piper's Flat, and Wallerawang, the quantity of splint coal raised was 9865 tons, of the value of 3254*l.*, against 5221 tons, of the value of 1565*l.* The New South Wales Shale and Oil Company used or sold for gas purposes 15,000 tons of petroleum oil canal coal, of the value of 46,250*l.* Valuable coal is being opened near Bowenfels Railway station, and excellent seams of splint and bituminous coal have been proved by various parties, which are suitable for smelting, steam, and household purposes; and when the Western Railway, now in course of construction, reaches nearer the rich deposits of copper ore lying to the west of Bathurst, it may then be expected that several smelting works will be erected here also. Some very interesting longitudinal geological sections across the dip of some of the lower carboniferous beds are now being laid bare and carried out by the Australian Agricultural Company, at Stroud, under his direction, which will, he trusts, next year add another proof to the correctness of the views expressed by the Rev. W. B. Clarke, himself, and others, as to the marine fossil fauna and flora found above and below their lower coal measures.

The Victorian officials appear to have misunderstood Mr. Mackenzie's reports upon the coal deposits of Australia, and he complains that he has been misrepresented in the statement that he corroborated the Victorian coal board. An abstract of Mr. Mackenzie's reports on the Victorian coal will be published in a future Journal.

THE COAL FIELDS OF VICTORIA.

With a view to correct certain misunderstandings which appear to have arisen in Victoria with regard to the opinion entertained by Mr. John Mackenzie, F.G.S., the Government Examiner of Coal Fields in New South Wales, who was appointed by the Hon. the Minister for Mines in Victoria to inspect and report upon the coal fields of that colony, an abstract of Mr. Mackenzie's reports is subjoined. Mr. Mackenzie expresses his surprise at a statement made by Mr. Brough Smyth, F.G.S., the Victorian Secretary for Mines, in a progress report dated Oct. 1, 1873, in which it is stated that he corroborated the reports of the Coal Board. It is only necessary, he continues, to place the different reports of Messrs. Hodgkinson, Smyth, and Couchman alongside his own to refute this statement, and show that he did not agree with them in their estimated thickness, extent, and number of the Victorian seams of coal, their economic value, and in saying that the successful competition with the mines of New South Wales was impossible. Mr. Mackenzie visited and examined the coal and strata at the Bass, Griffith's Point, Blue Mountains, Sandy Waterholes, Kileunda, Cape Patterson, Strelezki, near Anderson's Inlet, Stockyard Creek, at Corner Inlet, Traralgon, and Crossover.

At the Bass a shaft had been sunk on the river bank, and some coal said to have been found in it, but owing to its being half full of water he was unable to see the strata sunk through; he could not hear of any regular seam of coal having been discovered. At Griffith's Point the carboniferous strata, where a shaft has been sunk, and a small vein of coal found, are lying at an angle of 75°, and no workable seam of coal exists there; it is, in his opinion, only waste of money to sink or bore further in this locality. On Mr. Turnbull's land, at Sandy Waterholes, there are seams of coal exposed in natural cliff sections; these are regular seams, extending over a considerable area, and he believes them to be identical with the Rock and Queen veins at Cape Patterson. The coal is of very good quality, but is very much disturbed by faults, and dips 21° to the N.E. The workable portion of the No. 1 seam is 11 in. of good coal, and this is too thin to be of any commercial value. No. 2 measures 13½ in. of good coal, and if it had been formed with a better roof, and had been lying at a less angle, it might possibly have been worked by holing in the 3 in. of coal, lying about 2 ft. below. At Kileunda the seam extends over a large area, the coal produced is bright, bituminous, and non-caking, and the Coal Board's estimate of 15 in. of good and round coal is, he considers, a very liberal one, and quite as much as it will yield; it corresponds with the seam found at the Blue Mountain and Strelezki ranges, and on the sea coast west of the Rock and Queen veins. In his opinion it will be impossible to mine it at such a price as will enable the proprietors to compete with New South Wales or other intercolonial coal in the Melbourne market. At Blue Mountain, at a height of about 310 ft. above, there is a 17-in. seam, which he believes to be identical with the 20-in. coal at Kileunda. At Cape Patterson there are two seams of coal exceeding 1 ft. in thickness. The quality of the coal is good, but the faulty nature of the ground, the irregular and constantly changing dip, the thinness of the beds of coal, and distance from a shipping port, prevent its being worked at a profit. The average of three different measurements of the Rock vein give 2 ft. 4 in. of coal, which is divided by two bands of clay, &c., yet it is called a four-foot coal; similarly the Queen vein measures 2 ft. 2½ in., and is called a 3 ft. 6 in. seam. At Strelezki there is 2 ft. 4 in. of coal, with two bands (9 in.) in it, with a bad roof,

and would be expensive to work; it is not considered worth working. The lessees are boring deeper, but Mr. Mackenzie thinks they will have to bore at least 1200 ft. before meeting with any other regular seams of coal. At Stockyard Creek there is a thin and inferior coal, the seam varying from 9 in. to 1 ft. At Traralgon there is no coal worth working. At Crossover there is a lignite of fair quality, but it is at present of no commercial value in such a position; it is 4 ft. 11 in. and 4 ft. 4 in., with 5 ft. of shale, &c., between.

Meetings of Public Companies.

ECLIPSE GOLD MINING AND QUARTZ CRUSHING COMPANY.

The second ordinary general meeting of shareholders was held at the London Tavern, yesterday.

Mr. AUSTEN W. CASSWELL in the chair.

The notice calling the meeting was read by Mr. F. R. BLUETT, the secretary, and the directors' report was taken as read.

The CHAIRMAN said the directors were happy to meet the shareholders on the present occasion, not only for the purpose of giving them information, but also to receive any suggestions which any gentleman might wish to make. The directors still had the fullest confidence in the future of the company, provided the necessary funds were placed at their disposal. It would be observed that the number of shares allotted had only been to a limited extent, which so far had crippled the directors' hands. The directors had carried out considerable works with the limited means at their disposal, and if they succeeded in obtaining the funds which the directors required he had no doubt the property would be a success. He hoped the shareholders would not hesitate to subscribe for the debentures, particulars of which would be stated later on, which would put the company in such a position that at the next meeting they might fairly hope to meet with better prospects, and perhaps with a dividend. They would remember that Mr. Willett was to have left for California at the end of last year, but in consequence of the limited amount of funds in the hands of the directors the visit of Mr. Willett was postponed, but when the financial position of the company was put in a more satisfactory condition no doubt could be entertained but that the gentleman would leave for California. As regards the debentures, the proposal would be to issue 5000*l.*, which would bring up the subscribed capital of the company, including debentures, to the sum of 15,000*l.* It was proposed that the debentures should be for 2*½* per cent., each, one-half to be paid on application, and the other half to be paid within three months. They would bear interest at the rate of 20 per cent. per annum, the coupons to be payable quarterly, and the holders of the debentures would have the option of converting them into ordinary shares of the company at par before July 1, 1875, and it was proposed that they should go to the debentures at the rate of 100*l.* for 100 shares. The directors themselves had a considerable interest in the undertaking, and were prepared to take their quota of the debentures. The directors had elected Mr. J. Hubbert a seat at the board. He was a gentleman of commercial experience, and had proved a great acquisition. He had gone thoroughly into the mine, and had such confidence in it that he had taken 100 shares in the company. In conclusion, the Chairman moved the adoption of the report and accounts.

Mr. J. HUBBERT, in seconding the resolution, said there was one thing which he particularly wished to call attention to. Those who were shareholders in the old company knew, from painful experience, that the property cost 160,000*l.*—that was, 60,000*l.* for purchase of property, and 100,000*l.* spent on machinery, &c.—and yet it was sold to the present company for 4000*l.* The reason why the property was sold at such a ridiculously low price was because the late manager stated that the utmost he could extract from the ore was something under 3*½* per ton. That would not pay for the working; and the shareholders of the old company concluded it would be flinging good money after bad if they put any more money into it, and consequently they sold the property. But the present manager had proved that he could readily get 18 per ton from the rock; and there was no doubt there was an unlimited supply of quartz, and that a profit of 1*½* per ton could be obtained. That was one point which had induced him to enter largely into the company. But there was another thing which gave him confidence. Capt. Eudey, the present captain, was in no way compelled to take shares in the company; but as a matter of fact, so convinced was he of the goodness of the concern, that he had sold some property which he possessed and put the money into the undertaking. He thought this was the best proof they could have of Captain Eudey's confidence in the company; and, for his own part, he had no doubt that at this time next year they would be able to pay a very handsome dividend.

Mr. ATTRILL asked whether the directors thought of making a call, in addition to raising money by debentures?—The CHAIRMAN said they would have to do so presently, as there were some loans running which must be liquidated; that was part of the purchase money. They had already paid 3000*l.*, and must pay the balance, together with the expenses, on the patent being handed over to the company. Mr. ATTRILL thought 20 per cent. a large sum to pay for debentures.—The CHAIRMAN said that, after careful consideration, the directors had formed the opinion that it would be better to pay a higher rate of interest rather than issue the debentures at a discount. As regarded the high rate of interest, he said he hoped the debentures would be taken up by the shareholders, and, therefore, the interest would go into their own pockets. As regarded the patent, there was no doubt whatever that the company would get it, as no difficulty whatever had been thrown in the way. He believed the company would obtain the property for about 50,000*l.*, including all expenses.

The report was then adopted.

On the motion of Mr. B. N. POTTS, seconded by Mr. W. POTTS, the auditor, Mr. W. Westcott, was re-elected.

Mr. CHARLES V. WILLETT referred to the important fact that 3*½* or 4 per ton had been got out of the old "tailings," which were stated, when the old company had the mine, to be worth nothing. He referred to the rich character of the adjacent properties, which were now being worked, and which would run through the company's property, and thus enable a most important reduction to be made in the cost for freight. Speaking from a personal knowledge of the property, he expressed his confidence in its future success. Before sitting down he moved that a cordial vote of thanks be given to Capt. Eudey for his able management of the mine.

The CHAIRMAN said he had great pleasure in seconding the resolution, as he was able to confirm what had been said relative to the valuable services of Capt. Eudey.—The resolution was carried with thanks to the Chairman.

[For remainder of Meetings see to-day's Supplement.]

ECHOES FROM THE MINING MARKET.

The tin market, after being much livelier, has become a shade weaker, owing apparently to the result of the Banca sale. The 22,800 slabs (about 712 tons) sold at a price equal to nearly 92*½* per ton, laid down in London, against about 98*½* (not 96*½* 10*½*), as has been reported from Cornwall, for slabs amounting to some 680 tons at the January sale. We see no particular cause for extra depression on this result. The market is now a shade weaker than it was a few days ago, and the difference about represents the fall that has occurred. Copper has been weaker upon a sensible decrease in demand, but still there are not wanting signs that the depression is merely an affair of the moment. The iron trade remains in a most stagnant condition, and the consequences of such a continuance of inactivity must be very disastrous to iron companies. The principal business of the week has been in copper, lead, and colliery shares, and transactions in them have been numerous and at advancing rates. The following are the more important features. The Denver and West Australian Company now appear to have surmounted their difficulties in the Stannards Court, and we hear that they are doing well at the mines; four funds are yielding 13 tons of copper per fathom, and a winze 2*½* tons. At Dolcoath there is a great improvement in the bottom end, where the lode is looking at its best. A fine piece of tin ground has been laid open by holing the winze from the 303 to the 314, so returns may be augmented. A better enquiry has sprung up for New Consols shares. The lode in the bottom of Phillips's shaft has been cut into about 8 ft., and it is water there are indications of a profitable lode. The lodes in the 10, 30, and 80 fms. levels are also reported to be good. In North Pool the 40 end east is more encouraging in appearance, and there is also an increase of water. At Old Tebreturg the lode in the winze under the 60 has also improved, and is valued at 10*½* per fathom. Pedn-ar-drea is now clear of water 2 fms. below the 110; eight ends are worth 8*½* and a winze 18*½* per fathom. Perseverance has a stopes worth 10*½* per fathom. There is a good report from Peewor, which shows an improvement in two or three points.

At South Carn Brea the lode in the sink below the 150 east is worth 35*½* per fathom, and a stopes in the back of the level 25*½*; the last sampling here was 33 tons of copper ore. St. Just Amalgamated has been looking better, an improvement having taken place in the 120, west of Baveall's engine-shaft, where the lode is worth 20*½* per fathom. At West Chiverton good progress is being made in sinking, which we are glad to record. They have 300 tons of blende for sale, and are inviting tenders for same. The shares are gradually creeping upwards. At West Frances Capt. W. Thomas, formerly of Cook's Kitchen, has been selected to fill the post of agent, vacant by the death of Capt. Rabling. This selection will probably be generally approved of, as the qualifications of the new agent are undoubtedly. There were about 16 candidates for the office. Wheel Jane shows a profit of 420*l.* on three months' working, which, with the previous credit balance of 503*½* *l.*, has been carried forward to the next account. The mine is looking well, and with a better price for tin the adventurers may look forward to good dividends. Wheel Owles is said to be improving. They have a new lode in the West Cuning position of the sett. At West Tolguish a breakage has occurred in the balance box in the 40, which has greatly retarded operations. The agent reports, however, that the water is decreasing, the mine is in fork, and the lode in the 125 is, he thinks, improving. Wheel Uny has a debit balance of 774*½* *l.*, but owing to the favourable aspect of the mine no call has been made. From the above resume it will be seen that our Cornish mines generally are looking better, and there is not the slightest doubt that if the tin market could only get a little more settled there would be an enormous rebound in prices. It will come.

The first furnaces that have been erected in Cornwall for the extraction of arsenic from the stone have just been set to work at South Roskear Mine. This arsenic production is rapidly attaining important proportions in the county, and is a valuable adjunct to those mines possessing muffle in large quantities. The price, as we have more than once stated, has rapidly advanced of late, and leaves a handsome margin for adventurers.

The Wheel Agate executive do not appear to have quite succeeded with their Dartington dol., but it must be taken into consideration that the men are unused to machine drilling, and that it requires very careful working. The agents state that "they trust by a little more experience they shall succeed to the adventurers' satisfaction." We have no doubt of this.

A rise has taken place in Tankerville shares, and they are now quoted 11*½* to 12. This mine is turning out excellently, and bids fair to be the leading lead mine

in the market before long. The last report is a very important one, and indicates great riches.

The colliery share market has been firm. A good business has again been done in Chapel House, which has been bought largely for investment. Transactions have also taken place in Bilson and Crump, Cardiff and Swansea (rather weaker), Swansea Valley, Great Western, Ifon Rhy (almost nominal in price), Thorp's Gwawer, Newport Abercromby, and New Sharlston.

We have received some very encouraging accounts from the Glaisdale Quarry. The sale of stone for March has been the highest yet attained, and has more than covered costs. There appears no reason to doubt that in the course of the present year a good dividend will be paid to the shareholders, as under the energetic local management the quarry is being developed in a most satisfactory manner. A good deal of business has been done in the shares for investment.

The foreign mine market has exhibited increased activity, Javali shares having been in special request. These shares leave off very firm, and are exceedingly scarce, which looks like a "bear" account in them. Eberhardt, New Quebrada, Richmond, Sweetland Creek, and St. John del Rey have also met with enquiry.

JAMES H. CROFTS.

THE TIN TRADE.

Tin has been dull throughout the past month, and though the demand has been to a fair extent, renewed pressure to sell has caused a decline in prices. Since last week the downward movement has, however, been checked, holders showing more firmness upon improved reports from London, where large speculative purchases have been made at higher prices. The article attracts a good deal of attention just now. Yesterday the 25,737 slabs offered at the Dutch Trading Company's second sale in 1875 realised as follows:—22,784 slabs Banca, at 52*½* *½* to 52*½* *½*, average 52-60 *½*; 2663 slabs Billiton, at 51*½* *½*. Banca has been in fair request, but declined from 53*½* *½* to 52*½* *½*, subsequently advancing to 53 *½*. Since the sale there are buyers at 52 *½*. Contracts for delivery ex March sale changed hands from 53 *½* to 52*½* *½*. Billiton has again been largely dealt in, the price declining from 51*½* *½* to 49*½* *½*, from which there was a recovery to 51 *½*. There are now buyers at 50*½* *½*. On April 12 a public sale, comprising 10,000 peculs Billiton, will take place at Batavia, the position of Banca tin in Holland on March 30, according to the Official Returns of the Dutch Trading Company, was:—

	1875.	1874.	1873.
Import in March	Slabs 1,490	1,490	23,744
Total three months	9,819	22,363	55,245
Deliveries in March	12,775	16,694	9,400
Total three months	27,759	34,977	22,701
Stock second-hand	10,437	24,567	11,751
Unsold stock	117,277	97,139	121,758
Total stock	127,714	122,006	133,509
Afloat	Peculs 1,500	4,450	29,626

Statement of Billiton:—

	1875.	1874.	1873.
Import in March	Slabs 6,099	1,000	2,900
Total three months	16,349	4,000	10,450
Deliveries in March	8,323	1,400	3,345
Total three months	18,000	6,200	20,290
Stock	29,955	23,820	6,033
Afloat	Peculs 8,000	5,000	9,325
Quotation of Banca	52 <i>½</i> <i>½</i>	53 <i>½</i> <i>½</i>	57 <i>½</i> <i>½</i>
March 31 Billiton	51	51	51

These combined returns of Banca and Billiton, compared with those for 1874, exhibit an increase of the import for March of 113 tons; a decrease of the import of the three months of 8 tons; an increase of the deliveries for March of 94 tons; an increase of the deliveries for the three months of 143 tons; a decrease of the stock second-hand of 259 tons; an increase of the unsold stock of 365 tons; an increase of the total stock of 44 tons; a decline of the quotation of Banca of 1*½* per ton. The Government Returns for the months of December and January are as follows:—

are as follows:—

	EXPORT OF TIN FROM HOLLAND.									
	December.			Twelve Months.			January.			
	1874.	1873.	1872.	1873.	1872.	1871.	1875.	1874.	1873.	
Germany	Tons 298	279	265	337	2953	3802	217	194	304	
England	22	308	23	467	1804	313	13	27	155	
Belgium	109	184	117	1552	1211	1289	85	87	89	
France	40	25	17	445	485	148	—	—	—	
Hamburg	60	11	36	445	239	375	12	26	15	
United States	44	—	—	79	—	—	—	—	—	
Other countries	10	—	4	379	293	355	4	13	1	

Rotterdam, April 1.

In English no change has taken place. Foreign descriptions improved about 2*½* per cent. In the early part of the week, owing to further speculative purchases of Straits being made up to 90*½* per cent. both for cash and arrival. When the day of the Dutch sale approached buyers suspended their operations, and the result being scarcely so favourable as had been generally expected they withdrew from the market, and we closed yesterday at a fall of 3*½* from the highest point, with sellers rather than buyers at our list prices.

April 2.

A fair amount of business in tin was done last month, both in English and foreign. The arrivals have, however, been heavy, both from Straits and Australia. The deliveries are—Holland, Banca and Billiton, for March, 1875, 660 tons; London, Straits and Australian, deducting 84 tons from Holland, 770 tons; total, 1430 tons. For March, 1874, the deliveries were—Holland, Banca and Billiton, 566 tons; London, Straits and Australian, 855 tons; total, 1320 tons. The bill-monts sale of Banca was held in Amsterdam, and the quantity offered, 25,500 slabs, realised an average price of 52-60 *½*, equal to about 91*½* per ton in warehouse, Holland; at the same time 4000 slabs, Billiton, were sold at 51-25 *½*, about 89*½* Holland. The shipments from Straits for Europe in March were 800 tons, and from Australia about 180 tons. The quantity now floating from Australia, as nearly as can be ascertained, is 1950 tons. English is to date quoted, 94*½*; Straits, 88*½*; Australian, 87*½*.—April 1.

The market for foreign has been very unsettled during the month, Straits opened at 90*½*, declined to 87*½*, and at this point a considerable business was done down to 84*½*, chiefly for March-April shipment, and forward delivery. This depression was not participated in by spot holders, who declined to be influenced by such operations, and a sharp reaction soon set in, Straits selling up to 87*½*, and again at 89*½*, to 90*½*, which was the quotation pending the Dutch sale, which took place yesterday, when 22,800 slabs Banca, at an average of 52-60 *½*, equal to about 91*½*, 6*½* laid down here; also 3000 slabs Billiton, at an average of 51-25 *½*, equal to about 89*½*, 6*½* per cent.; this being hardly so good as was expected, the market closes with a drooping tendency. The deliveries are again large, amounting to 797 tons foreign from stocks here, and 675 tons in Holland, 84 tons of which were sent here. Australian has not been offered so freely as Straits, and a moderate quantity has been sold at from 85*½* to 88*½*, 89*½*, being paid for extra fine quality. English rather neglected, but relatively, rather dearer than foreign.—April 2.

VIVIAN, YOUNGER, AND BOND.

THE COPPER TRADE.

There is no change in the value of this metal since our last. English and Australian are more freely offered, but Chili copper maintains good prices, continuing the extraordinary depression that exists in the trade. The statistical position shows an increase in spot stocks of 2375 tons in the month, and afloat and chartered 516 tons, while taking into account as well the quantities cabled as afloat from Australia and Chili, there is a diminution of 1600 tons. The charters from the West Coast to March 16 are 9300 tons against 10,500 tons in 1874. The shipments to Feb. 16 are 6108 tons against 6262 tons last year. The demand from all sides remains most limited, and for yellow metal and brass goods of all denominations, continuing the extraordinary depression that exists in the trade. The equivalent value of English and foreign copper, the latter being maintained fully 3*½* per ton above marketable value, simply by large speculative holdings.

The imports of copper into England for the first two months of the following years were—1871, 11,345 tons; 1872, 15,312 tons; 1873, 10,296 tons; 1874, 13,267 tons; 1875, 13,944 tons. The exports for the same periods were—1871, 3768 tons; 1872, 5065 tons; 1873, 8424 tons; 1874, 7977 tons; 1875, 7256 tons. The position from April 1, 1874, to April 1, 1875, was as follows:—

	Stock on hand.	Stock, including afloat.
1874-April 1	275 0 0	29,500
May 1	74 0 0	30,643
June 1	75 0 0	27,522
July 1	78 0 0	26,679
August 1	76 0 0	27,762
September 1	78 0 0	26,852
October 1	84 0 0	24,035
November 1	86 0 0	21,957
December 1	87 0 0	20,572
1875-January 1	83 0 0	20,668
February 1	83 0 0	21,008
March 1	82 0 0	20,990
April 1	80 0 0	23,365

And the comparative positions at the same date of the past four years with the present are as follow:—

	Price.	Stock on hand.	Stock, including afloat.
1871-April 1	£84 0 0	29,500	36,908
1872-April 1	97 0 0	30,643	36,993
1873-April 1	92 0 0	27,522	34,238
1874-April 1	75 0 0	26,679	32,275
1875-April 1	80 0 0	23,365	32,758

Leadenhall-street, London, April 1.

No transactions have taken place in ore or regulus by private contract, and there is virtually nothing for sale at present values. Bars are steady at the rates quoted last week; a few transactions were reported in good ordinary brands at 80*½* cash, also at same figure with a fixed prompt of three months, the sellers thereof having a bad opinion of the future, and being willing to back their views by sales for forward delivery, at the same time ruling for spot parcels, where buyers required the option of taking up the stuff any time within the prompt they have been compelled to pay a premium of 10*½* per ton. A small trade has been done in picked marks at 80*½* 10*½*; best brands at 81*½* and 81*½* 10*½*, all cash terms. The market closes steady at these prices, and though buyers are few sellers thereat are equally wanting. It is to be noted that a somewhat long standing error has existed in the returns of the Havre stock of bars, the figures during the last few months having been about 600 tons below the quantity actually lying there; this is now corrected, but the actual deliveries of the month are, therefore, greater by 500 tons than those which have apparently taken place according to the statistical figures. Australian sorts are quiet, and quotations somewhat nominal, the difference between buyers and sellers' views being too great to permit of any important business. English descriptions continue dull, but tough ingot is scarce, and commands a most the same value as select.

JAMES AND SHAKESPEARE.

The course of the market during the past month serves to illustrate in a more marked degree how the generally existing depression has influenced this article. The smelters have bought the bulk of the furnace material that has offered, chiefly of floating cargoes, at current rates; but, with this excep-

tion, the demand has been slack for most descriptions; and, notwithstanding the continuance of moderate charters advised for the past two months from Valparaiso (showing an average of only 1675 tons in pure copper per fortnight), prices have declined to 80*½* for Chili Bars, and 80*½* for tough, without including any speculations, or acting as any stimulus to the trade. The moderate deliveries of bars from the public stocks during the past two months are owing to the French demand being chiefly supplied from Havre, and the annexed statistics show that, taking into consideration the closer communication with Valparaiso by sea, the position is becoming less favourable month by month, and, under the confirming the opinion expressed in our annual circular, that, at the present moment of prices, the supplies would be ample to meet the general requirements of the trade for some time to come.

VIVIAN, YOUNGER, AND BOND.

This metal has been neglected during the past month, and quotations are about 2*½* per ton lower than on March 1. The charters from the West Coast continue moderate—for the last half of February, 1500 tons bars and ingots; and for the last half of March 1700 tons, of which 200 tons are destined for the United States. Smelters have made considerable purchases of furnace stuff during the month at 18*½*, 8*½* per unit for ore, and the demand for tough and malleable bars has been slow. Australian has participated in the general dullness. We quote Chili bars, 80*½*; Wallaroo, 90*½*; tough 86*½* to 87*½*; manufactured, 94*½* to 96*½*.—London, April 1.

STATISTICS OF COPPER—APRIL 1.

	Tons	Value
Chili bars and regulus, Liverpool and Swansea	660	10,328
Chili bars in Liverpool	1,538	1,538
Chili bars in Swansea	314	314
Chili ingots in Liverpool	—	—
Chili bars in Swansea	—	—
Foreign copper (chiefly Australian) in London	5,352	5,352
Chili bars arrived here but not yet landed	1,921	1,921
English copper in London	60	60
Chili bars and Barilla in Havre	2,160	2,160
Other copper in Havre	—	—
Afloat and chartered from Chili to Europe (advised by mail)	8,235	8,235
Ores and regulus (equal to fine)	5,335	5,335
Bars and ingots	4,293	4,293
Afloat and chartered from Australia (advised by mail)	—	—
Fine copper	1,626	1,626
Afloat and chartered from Chili to Europe (advised by cable)	3,000	3,000
Fine copper	—	—
Total	37,323	37,323

Price of bars, 80*½*; Australian ditto, 90*½*; English tough ditto, 87*½*.

April 1, 1875.

HENRY R. MERTON & CO.

TYLLWYD MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The letter of "C. E. W." in last week's Journal betrays such an amount of ignorance that I feel convinced he cannot understand what he is writing about. He says "the ore in the bottom of the winze is valued at 1 ton of less or more per fathom, but he possibly imagines 'the bunch of ore has been unbottomed'." As I rather suspect "C. E. W.'s" letter is written with the view of adversely influencing the market price of the shares more than with the desire to elicit any favourable information regarding the mine, there being no such name among our shareholders as having his initials, perhaps he will not be too well pleased to learn that the ore in the south lode has not been unbottomed, nor any portion of it, but that it is going down with every appearance of becoming richer in depth, and the end at the present time is estimated by the manager to be worth 1 ton of ore per fathom.

The engine-shaft is now being sunk another 10 fms., when we shall drive out again on the south lode. At the 20, the manager estimates we have laid open 400 tons of ore, and in driving west of the winze the ore is becoming richer as we get into the valley. On the south Neil lode the manager calculates we may have about another 500 tons laid open, making altogether about 900 tons of ore on both lodes. With reference to "C. E. W.'s" remarks, not being a shareholder, he is aware that an engine-shaft has been sunk about 38 fathoms from surface, a 40-foot water-wheel placed, but, after having completed these, the directors considered it only prudent to lay open a considerable quantity of ore before erecting a crusher-house or dressing floors, as they saw no wisdom in building these before finding the ore, as is too often done—to the ruin of a mine—and I do not know whether it be as pleasant to "C. E. W." to learn as it will be for the shareholders to be informed that, a large quantity of ore has been laid open, the crusher house and dressing floors are just on the eve of being finished, and will be in work next month, when we hope to sell one fine parcel of ore, with every prospect of regular monthly sales being kept up and handsome dividends paid.

[For remainder of Original Correspondence see this day's Supplement.]

MINING NOTABILIA

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

WHEEL GRESSON (eight miles from Tavistock and four from Lamb-croft).—This sett was worked many years ago, and given up owing to the low price of lead, and being held principally by two parties who had not sufficient capital to extend operations. It contains five lodes; the deepest sinking is a 20 fms. level, driven on the course of one of the lodes 70 fms., from which over 600 tons of lead has been raised and sold. Another of the lodes, which was termed the copper lode, has been driven on about 30 fms., producing throughout very good work for a crusher. This lode is 3 fms. north of the lead lode; they will form a junction at about 36 fms. under the present level. Another of the lodes, from which lead has been raised, is about 15 fms. further north; while another is about 45 fms. further north, from which good stores of copper and lead ore have been raised. The lodes have been proved to be making a considerable quantity of ore at a

is not solely a science of synthetical operations even at present. It is true, as the chief analytical chemists have repeatedly pointed out, that in the rapid accumulation of organic compounds the means of their identification and separation have been left in comparative neglect. It is true also that the field is limitless, but this is not a reason for doing nothing in it. As a result of his labour, Prof. Prescott has produced a work which is well worthy of recognition as a text book both in England and America, and upon the utility and completeness of which he may well be congratulated.

PRACTICAL HYDRAULICS.

Although many years have elapsed since Downing's Practical Hydraulics was first introduced as a text book no work subsequently published has been able to supersede it, whether considered for its utility to the student or for its general reliability, and the third edition,* the first portion of which has now been issued, is in every respect calculated to maintain the reputation of the work. The science of hydraulics he defines as having for its object the knowledge of the phenomena of fluids in motion, and of the laws which regulate the production of these phenomena. Applied as an art, its object is to render this knowledge available in the designs of the civil engineer, as in the determination of the dimensions of pipes for conveying water, gas, or air, and also in works for collecting, conveying, and distributing the necessary supply of water for mill power, or for the summit levels of canals, or for the supply of cities, and generally of all such works as depend for their suitable construction and proportions upon the result of calculations requiring a knowledge of the pressure and motion of fluids. Fluids he defines to be those bodies which are perfectly mobile, and yield to even the least force: they have, however, a certain degree of adhesion or viscosity which binds them together. These bodies are divided into two classes—the incompressible, or fluids properly so called, and the elastic. Water is the more common form of the former, and the atmosphere of the latter. Although fluids, as, indeed, all substances in nature, are in strictness both compressible and elastic, yet the difference in degree is so marked, and the distinction in the expression of the terms is so definite, that in this division the division must be retained, and hence we have hydraulics properly so called treating of the incompressible fluids, especially water, and aerometry, treating of the atmosphere and gases.

Having thus given the student a clear idea of the general nature of the subject, Professor Downing proceeds to explain the values of two quantities which occur in all calculations in hydraulics—the weight of water and the measure of the force of gravity—and here he necessarily exposes the imbecility and ignorance of the English and Americans, as compared with the inhabitants of those countries which have adopted the beautiful metrical system of the French. The absurdity of the English system is that a cubic foot of water weighs 62 3/4 lbs. avoirdupois, the weight of the pound avoirdupois being defined by Act of Parliament to be equal to 7000 grains, the grain being thus determined. In 1760 Mr. Bird made a weight of 21lbs. Troy. The Act directs that half of this is to be divided into 5760 parts, and that 7000 of these parts shall be one pound avoirdupois. Again, a cubic inch of distilled water weighs 252 4/8 grains, and a gallon of water measures 277 2/3 cubic inches. The imperial system of measuring is thus a mass of confusion and absurdity. Professor Downing uses throughout the work no other units than the foot and the cubic foot, but he explains that we have in English works on hydraulics a great variety of units—for volume, the gallon, the cubic foot, the ton, the cubic yard, and the hoghead (the latter would certainly seem to be the most appropriate unit for those who refuse to adopt the metric system); and for length, the fathom, the yard, the foot, and the inch; which, coupled with the absence of decimal subdivisions in our system of weights and measures, render our system as intelligible as it is practicable to make them, it is explained that the measure of the force of gravity is the velocity acquired in one second by a body falling freely from a state of rest, and is equal to 32.1918 per second, and is always denoted by the letter *g*.

Since the first appearance, now more than 30 years ago, of Dr. Will's "Outlines of the Course of Qualitative Analysis followed in the Giessen Laboratory," it has become so customary for students of inorganic analysis to be taught from the moment they enter the laboratory to adopt a defined and scientific method of procedure, usually explained in concise language in a reliable text book with which they are provided, that the younger chemists can scarcely appreciate the obstacles which the student of half a century since had to encounter in acquiring the knowledge requisite to give him even a decent position in his profession; yet it has been left for Prof. ALBERT PRESCOTT, of the University of Michigan, to perform to-day a corresponding service for the students of organic analysis,* and in doing so he has furnished an outline which, if not perfect, will assuredly form the basis upon which future systematic methods of organic analysis will be built. Well knowing that in so large a field as he has undertaken to cover, the labours of a single investigator would be of comparatively little utility for ascertaining the almost innumerable details which have to be recorded and discussed in the course of the similarities and differences of the behaviour of several compounds, Prof. Prescott has wisely availed himself of the researches of all the best authorities, American and European, upon the several classes of substances dealt with, so that full reliance may be placed upon the information which he furnishes.

In making the preliminary examination, the first consideration will, of course, be whether the substance to be examined be a solid or a liquid. CARBON (uncombined) is recognised by its sensible properties (as charcoal, graphite, or diamond), by not vaporising when heated, and by resisting ordinary solvents—neutral, alkaline, or acid—except that graphite is oxidised by digestion with chlorates and sulphuric or hydrochloric acid, or with bichromates and sulphuric acid, or with a mixture of nitric and sulphuric acids, or on ignition in the air, or in a closed tube with oxide of copper; carbonic anhydride is obtained from carbon monoxide as well as from its compounds. THE COMPOUNDS OF CARBON (2), except the alkaline carbonates, yield carbonic anhydride when ignited in the air or in a tube with supply of oxygen (as with dry oxide of copper). The non-volatile "Organic" Compounds of Carbon leave a residue of carbon after combustion, that is, they carbonise by ignition. Having satisfactorily ascertained that it is not uncombined carbon under examination, a (3) preliminary examination, assuming that they are carbonaceous, is next made, as follows:—*a.*—Heat gradually in a test tube open at both ends or on platinum foil. The substance is permanent: it is inorganic. It carbonises or burns away leaving no residue: it is organic—see 5, *a.* It carbonises and leaves a fixed residue: it is organic and inorganic—see *c.* There is doubt as to carbonisation: test according to *b.* The substance vaporises—wholly or partly: test according to *b.* Also consider ammonium salts, the volatile elements, and the inorganic compounds with acids, oxides, sulphides, &c. Examine according to 4 *b.* *b.*—Mix the dry substance (2) free from solid carbon, with a small quantity of dry oxide of copper; introduce into a short combustion tube or hard glass test tube; connect by a cork and bent narrow tube, with a solution of lime, or baryta, or basic acetate of lead, and ignite. If a precipitate be formed, test it as a carbonate. *c.*—Ignite a portion in a porcelain capsule until free from carbon—cooling

That the research of continental philosophers may not be incomprehensible to the student, Prof. Downing gives a concise and lucid sketch of the metric system. He remarks that so many French works on hydraulics of great value have been composed that a notice of the metric weights and measures may here be useful. The *metre*, the adopted unit of length, is equal to 39.37 inches, or 39.37079 inches, or 984.208599 lines, which in practice may be taken as 39.37 in. and 3.281 ft. It is multiplied decimally into the decimeter, the hectometer, and kilometer, and is subdivided decimally into the decimeter, the centimeter, and the millimeter, the Greek word being affixed for multiplication, and the Latin word for division by ten. The unit of weight is the gramme, which is equal to the weight of a cubic decimetre of distilled water at the temperature of 4°C. (supposed to be its maximum density), and *in vacuo*, the side of the cube being one centimetre in length. As the decimeter is equal to ten times the centimeter, its cube will be 1000 times the cubic centimetre; the kilogram, therefore (1000 grammes), is the weight of a cubic decimetre or litre of distilled water at the above temperature. It is equal to 2.20455 lbs. avoirdupois, hence the English units of length and weight are in this system mutually connected; it is not so in the English weights and measures; the side of a cube containing one gallon cannot be expressed by any whole number of inches or any other lineal measure, as the foot, &c.: it is a little greater than 6½ in. Hence the long columns of specific gravities, which are not needed in the metric system, as the weight of any body expressed in grammes, divided by its specific gravity, will give its weight in grammes, or the weight of an equal bulk of water.

or its weight to the weight of an equal bulk of water. The velocity of water contained in a vessel, and in it Prof. Downing gives, a single evidence of his care to prevent wrong impressions being formed, which may be taken as a sample of the strict attention to detail observable throughout the book. Referring to the general principles of the flow of water, and the modification which the contraction of the fluid vein suffers in passing through the various orifices to be noticed, he explains that the vertical distance of the surface of the fluid above the centre of gravity of the orifice is called the *charge* of the water upon the orifice, or the *head* under which the flow takes place. This point, he remarks, is not to be confounded with that which the flow of velocity is found to be most affected by, without any sensible error, be taken to represent it; the exact determination of it will be found in a future page. Next he treats of the velocity of water flowing from an orifice, and explains the several methods of determining the velocity. The general principle that the velocities are as the square roots of the charges, as also the theorem of Torricelli, for cases in which it is applicable extends to every kind of fluids—to mercury, oil, and alcohols, so that the velocity with which each of them issues from an orifice is independent of its particular nature and of its density, it depends solely on the charge. In a subsequent chapter, he traces the causes of the resistance to the minute charges, and then, given, antecedent velocity, cylindrical adutages, and conical adutages, whether converging or diverging, are treated of, and ample information with regard to weirs, waste boards, or overfalls is furnished; whilst the second chapter deals with the flow of water under a variable head, and is followed by a large number of examples and practical applications of the principles explained in the former portion of the volume. The third chapter, which completes the first part of the treatise, describes the general principles of flow through pipes, channels, and rivers, and contains all necessary particulars with regard to the laws of the motion of water on the bottom and sides of channels, the best form of channel, and the determination of the mean velocity by inspection of a single channel.

The concise and lucid style in which Professor Downing conveys his instruction is already well known, and his Practical Hydraulics has long been recognised as decidedly the best guide that can be placed in the hands of the student, so that all that need be said with regard to the present edition is that every improvement which experience has suggested has been introduced; that numerous illustrations have been given in order that no doubt can possibly arise when the matter would not be quite clear without diagrams; and that those who rely upon the volume in its present state will have no cause to fear presenting themselves for any competitive examination upon the subject, or undertaking the solution of any question likely to arise in practice.

and adding a drop two of concentrated nitric acid from time to time, if necessary to facilitate combustion. Submit the residue to inorganic analysis. Examine another portion for organic bodies—applying the solvents, as in 134 (9) or (7). An index of some of the most common organic solids is given in 5, a. An explanation is next given of (a) the primary and secondary tests. LIQUIDS, to determine whether a portion is volatile (organic or not), to separate dissolved solids. Evaporate the portion on a slip of glass, at a very gentle heat. If, after cooling, a solid residue is obtained, test it according to 3. If there be an insufficient residue, obtain for this examination a larger quantity by distillation as directed in b. *b.*—Distil from a small retort or connected flask admitting a thermometer, using a very gradually increasing heat, and changing the receiver as often as the boiling point is seen to rise. *c.*—The residue is then tested for the various portions as according to 3; the liquids, according to 3 a or b—then referring to alphabetical order. *d.*—See paragraph. An index of organic liquids is given in 5, b. It is unnecessary to reprint the succeeding section (5) in which the indexes referred to are given, but it may be mentioned that amongst the non-volatile solids there is given the names of a couple of dozen of the more commonly met with acids in alphabetical order, half-a-dozen fatty acids in similar order, fixed salts of volatile acids, fixed oils, soaps, resins, alkaloids, and other compounds. The number of the section in which each is treated of, in the subsequent part of the book, in which the peculiar nature of each is treated of, being given in each case) whilst among the volatile solids there are about a dozen acids, camphor, anthracene, alizarin, anilin compounds, chloral hydrate, iodoform, and salts of the volatile alkaloids. The liquids are ranged according as they are non volatile acid (lactic), fatty acids, fixed oils, soft soaps, and glycerine; or volatile acids, volatile oils, creosote, volatile alkaloids, anilin, or solutions of the same.

vents, reference to the several paragraphs being given as before explained.

That organic compounds can be brought into a few and clearly defined groups as readily as inorganic matters or simple elements is not to be pretended; yet classification is no less important, and with this aid Prof. Prescott's book it will be much facilitated. In the first division in which the acids are placed, the first solid non-volatile acids may be taken as a sample. Tartaric acid, $\text{H}^+ \text{C}^+ \text{H}^- \text{C}^+ \text{H}^- \text{H}^+$ is described as being characterised by the form of its crystals and its rotation of polarised light (*a*), by its odour when heated, and its colour when treated with sulphuric acid (*b*), and so on. It is then explained how it is separated (as free acid) from salts, &c., insoluble in alcohol, from alcoholic solutions, from citric acid, and so on; and it is then stated how it is determined. The several characteristics, modes of separation, and of determination are first given collectively and briefly, and afterwards separately and more in detail, so that the reference is greatly facilitated by brief directions (*c*), &c., being referred to subsequent portions of the same numerical paragraph, containing the details. Thus turning to the twelfth division of the paragraph (*f*) it is found that free tartaric acid, un-mixed with other acids may be determined volumetrically by adding a normal solution of soda to the neutral tint of litmus. Weighing 7-500 grammes, the required number of cubic centimetres of normal solution equals the number per cent. of acid. It is then explained how in the absence of acids forming lead salts it may be precipitated, &c., and weighed as normal lead tartrates; when $\text{PbC}^+ \text{H}^+ \text{O}^- \text{C}^+ \text{H}^+ \text{O}^-$ is $1:0:425356$. Similar directions are given for cases where it is expedient to weigh as potassium bitartrate, and for cases where it must be determined as potassium bitartrate. These indications are given first of course, but from the lucid manner in which the information is given every fact recorded is referred to at a glance. The succeeding paragraph naturally treats of racemic acid, the isomer of tartaric, and it is explained that racemic is distinguished from tartaric as follows:—By forming trileinic crystals, $\text{H}^+ \text{C}^+ \text{H}^+ \text{O}^- \text{C}^+ \text{H}^+ \text{O}^-$, soluble in five parts cold water, or 48 parts of alcohol of sp. gr. 800; slightly efflorescent on the surface losing the water of crystallisation at 100° . By its solution (uncombined) being able to form after a short time a slight precipitate in solution of calcium sulphate, and a precipitate in solution of calcium carbonate; the precipitate of calcium racemate, being soluble in solution of tartaric acid, precipitated from ammoniac, but that is non-soluble in chloride of ammonium solution, by being inactive, and not rotating polarised light. The "Oulines" appear to include about 800 substances, most of which are treated with equal completeness.

* "Elements of Practical Hydraulics for the use of Students in Engineering and Architecture." Part I. By SAMUEL DOWNING, LL.D., Professor of Civil Engineering in the University of Dublin. Third edition, revised and enlarged. London: Longmans, Green, and Co.

GEOLOGY OF VICTORIA.—An interesting series of "Observations on New Vegetable Fossils of the Auriferous Drifts," by Baron Ferdinand von Müller, the Government botanist, has been printed in connection with the Geological Survey of Victoria. *Spondylostrobus*, *amylith*, *phymatocaryon mackayii*, *trematocaryon macellanii*, *rhytidiotheca lynchii*, *pleiscaparris prisca*, *celyphina maceoi*, *odontocaryon macgregorii*, *conchotheca rotundata*, *rhytidiotheca pleioclinis*, *pentaneus clarkii*, *p. brachyclinis*, *p. trachyclinis*, *diuneis pilioluta*, *platycloa sullivani*, *phymatocaryon angulare*, and *conchotheca turgida*, are described and figured, each lithogram being accompanied by the necessary explanations. No trouble seems to have been spared to render the work (which is published by Messrs. in Melbourne) as complete as possible. The Government printer, and in London by Messrs. Triibner complete, and the Secretary for Mines very justly compliments Mr. B. Shepherd for the admirable manner in which the lithograms are executed. The work is altogether a very important contribution to Victorian mining literature.

LAMPS.—Lieut.-Col. MARTIN, of Box Grove, Guildford, has patented some improvements in lamps for railway carriages, also applicable to mining lamps. The invention consists in admitting the air supply to the burners of railway lamps from within the railway carriage instead of from the external atmosphere. For this purpose the air tubes are made to communicate with openings formed in the lower part of the casing within the carriage, or the air tubes are dispensed with, and the air is admitted through holes in the lower part of the casing or in the top of the glass globe, such holes being provided on the inside with deflecting plates for directing the air downwards. The glass globe is made to open at the hinge so as to enable the burner and the glass globe to be removed from the inside of the carriage. The air tubes are made of oval shape in transverse section, with a flat side next the glass, and the oil tube is enclosed within the air tube, or an air tube of small size and the oil tube are enclosed in another tube of the above described shape. The said improved lamps are also rendered applicable as mining lamps by covering the air holes with fine wire gauze.

MACHINERY FOR EXTRACTING PEAT.—The invention of Mr. ERNEST BALBIANI, of Paris, relates to machinery for extracting peat, consisting of a platform mounted on wheels to move along the peat bank, and having on its engine and driving gear, and a number of vertically ascending and descending cables arranged in a regular order, said cables having their free ends opening into the peat. The platform is steadied by protecting framing attached to a truck running on the lower level of the peat, or when there is water at the lower level to a floating barge or raft.

BRITISH MINES.

y, March 31: In No. 4:

DEVON GREAT CONSOLS.—Jas. Richards, April 2: Wheel Josiah: Richards' engine-shaft is in regular course of sinking below the 235 fm. level; 3½ ft. of the lode is being carried, composed of caple, mandle, quartz, and a little tin ore.—Richards' engine-shaft: In the 60 or 61 ft. level west the lode is 4 ft. wide, and worth

The north side of the level being about the boundary line, in the present end we have six men rising at 20 $\frac{1}{2}$. per fathom, in a lode 9 ft. wide; worth 30 $\frac{1}{2}$. per fathom for length of rise. In rising we shall leave the boundary line, and shall shortly have the whole width of the lode (14 ft.) available for stopping. The lode in the rise in back of the 30 east is 10 ft. wide, worth 25 $\frac{1}{2}$. per fathom, and is working by six

per fathom. In the 70 west end the lode (north) is worth 20¢. per fathom. In the 60 west end the lode (north) is worth 8¢. per fathom. In the 55 west end the lode (north) is worth 7¢. per fm. In the 47 west end the lode (north) is worth 8¢.

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this job will occasion no actual suspension of productive work, but we shall be obliged during its completion to make washing rather intermittent. The sluice is all ready, and the rest of the grade has been filled in with sills in place, so that by starting the water the sluice can be finished in seven or eight days more, so that the monitors placed ready for operating in four or five days more. We are then in a position to run up to the high banks in line 23 without stoppage; one run of 20 days will take us up to this point, and should the gravel prove as good as what we have met with from line 15 north excellent results are certain. As soon as we get in 300 hours we shall clean up and remit the gold. Not a moment shall be lost when we have a chance to wash, and I hope to see this time made long before the end of next month; we have now run 83½ hours in one week, which gives us a fair start. Thus far our short period, looks very well, much dry amalgam being visible at the head boxes.

EBERHARDT AND AURORA.—F. Drake, March 8: Since my last we have had a severe snowstorm, completely blocking up the roads, which accounts for the small amount of ore being delivered at the mill during the week. I was obliged to take away my ore sorters and put them on to the road shovelling snow, which explains why there was so small an amount of ore assorted. Out of the 229 tons of ore rock hoisted there was only 67-12 tons assorted; the balance of the ore is lying in the assorting room unassorted, which I make no mention of in my weekly report, as rendering an account for only the ore assorted.—Mine: Drift No. 4, in the 1st level, is looking well. The ore is good, and making north—it has the appearance of connecting with a large body of ore.—Rise: Drift No. 4, in the 2d level, is now in good ore. When this rise is connected with drift No. 4, in the 1st level, it will greatly aid us in conveying our ore to shaft.—Incline: Looking about the same. The footwall is regular and well-defined; the depth is 73 ft., making it 340 ft. from surface. Drift No. 1, in the 3d level, is 108 ft. in length; we have not struck the wall yet; we are running in a broken mass of quartz, lime and spar, principally lime; we hope to meet with change soon. Drift No. 1, in the 4th level, is 190 ft. in length. No change. Mill: It was calculating to start it up to-day, but the condition of the road will admit the hauling of but a small amount of ore. I deem it advisable not to start up until there is a change in the weather.—Water: During the time the mill has been idle I have had the White Pine Waterworks closed down, taking advantage of the water being out of the pipes. I have arranged a small tank to receive the water flowing down the canyon from the thawing of the snow, which by a connection is conducted into the main pipe leading to the mill, so that the water will keep supplied with water. The amount of water that will be required for the mill supply for at least two months, thus saving the great expense of a continuous running of the White Pine Waterworks for this length of time.—Enclosures: Duplicate of my No. 119 and No. 120 weekly report for mine and mill for week ending March 6.—I beg to acknowledge the receipt of your No. 73, of date Feb. 3, and duplicate of your No. 73 of date Feb. 2.

UNITED MEXICAN.—Extracts of despatch from Mr. Edward Hay, dated Guanajuato, Feb. 24, and received on March 31:—In the mine of Jesus Maria the repairs of the shaft were being proceeded with. They had interfered rather with the extraction of ore, and on the 24th the level had become lower. In spite of this, the ore has been taken out steadily, notwithstanding the rain. Water was coming from the end. A strip of veinstuff had been traversed, and a new wall found, containing a good quantity of iron pyrites. The end, west of the adit, had been continued in hard rock, without any noteworthy change in its appearance. In the lower mouth of San Antonio Mine a very narrow strip of ore had been found, which the commissioner looks upon as "a partial small improvement on one side of the lode."

NEW ROSARIO.—The latest advices received from the mines are of a very encouraging character. The new lode they are now working on at the bottom of the shaft is reported well. The ore is clean, and the mine will be entirely independent of any assistance from England.

CAPE COPPER.—The trial mine report for February has been received. It shows no material change from the last. Plans and sections of the Ooakley Mine, together with remarks on them from Capt. Tonkin, have been received.—Railway: Traffic for fortnight ending Feb. 29, 197 tons up, and 385 tons down. On the 23rd ult. 665 tons of ore were sold at public ticketing, at an average of 11s. 1d. per unit, realising 167,480. For sale, by public ticketing on the 6th ult., 870 tons of ore have been put forward.

MENZENBERG.—R. K. Roskilly, March 29: In the 45, driving west of cross-cut, the lode has very much improved in size and character, the part being carried is 6 ft. wide, containing good stones of copper ore—a promising lode; this level is 15 tons per fathom. In the 170, west of Taylor's, the lode is 8 ft. wide, carrying good ore, and the rise in the back of this is 3 ft. wide, and still yielding some rich black oxide of copper, with a good appearance. We have no other change calling for remark throughout the mine. Friday being setting-day, a full report shall be sent.

PESTARENA.—Thomas Roberts, March 24: District of Pestarena: In the new incline we have removed the penthouse down to back of the 55, and are now in a fair way of sinking the shaft under this level. The lode in the 33 and, driving north, is small. In the 55 and north we have an improvement; the lode is 8 in. wide, composed of quartz, carrying strings and occasional stones of pyrites to surface. The ground being fine and fresh, we have begun to prepare stamps for bullion, and are looking for water from a new drift at 100 ft. below the old workings. The ground being frozen over progress on this is slow.—District Battiglio: Cani: The lode in the end of Ribasso Sasso Nero is very regular, now about 6 in. wide. We shall make a mill trial of the ore from this end next week. Nothing new in the Val Topica district.

LUSITANIAN.—March 23: Palhal: Basto's Lode: Taylor's shaftmen are now driving the 150 west, where the lode is composed of schist and flookan, with small stones of ore in it; and stopping the back of the 150 east, where the lode is producing ¾ ton per fathom. Nothing has been done in the 180 west; the lode will yield 1 ton per fathom. In the 170, west of Taylor's, the lode is 10 in. wide, carrying good ore, and the rise in the back of this is 3 ft. wide, and still yielding some rich black oxide of copper, with a good appearance. We have no other change calling for remark throughout the mine. Friday being setting-day, a full report shall be sent.

LINARES.—March 24: Pozzo Ancho: The 100 fm. level, west of Warnes engine shaft, is opening up a good length of valuable ground, producing at present 3 tons of lead ore per fathom. The lode in the 85, west of Crosby's shaft, is small and unproductive. There is no improvement in the 75, west of this shaft. In the 65, west of Peill's engine-shaft, the lode is of a promising appearance, and yields 2 tons per fathom. The lode in the 55, west of same shaft, is small and poor. In the 45, west of Judd's shaft, the lode is compact, producing ¾ ton per fathom. In the 65, east of this shaft, is very hard, and the lode quite unproductive. In the 55, in the same direction, the lode continues small and poor. Good progress is being made with the sinking of Peill's engine-shaft below the 75 fm. level. The men in San Francisco shaft below the 75 are getting on well with the sinking. The lode in No. 195 winze below the 55 is small and poor. In No. 197 winze below the 65 the lode has fallen off a little, and now produces 1 ton per fathom. In a new winze (No. 1) below the 85, east of Warnes engine-shaft, and in advance of the 100, there is a lot of good lead yielding 3 tons per fathom.

Los Quintones: The 50, west of Taylor's engine-shaft, is in a large and strong lode, composed of quartz and lead ore, worth 2 tons per fathom. There is nothing to value in the 65, west of this shaft. In the cross-cut south of Cox's shaft, at the 32, good progress is being made. The 80, east of Taylor's, is opening up good tribute ground, worth 2 tons per fathom. The ground in the 65, east of this shaft is hard, and the lode of no value. The same remark applies to the 55, east of Addis shaft, and the 45, east of the 80. In the 80, east of Taylor's, the lode is 10 in. wide, carrying good ore, and the rise in the back of this is 3 ft. wide, and still yielding some rich black oxide of copper, with a good appearance. We have no other change calling for remark throughout the mine. Friday being setting-day, a full report shall be sent.

LA RESTOSA.—March 24: Asuncion: The rock in Judd's shaft, below the 80 metre level, shows a favourable change, being softer, and containing stones of lead; neither silver nor the lode is seen. In the 50 north of Healy's shaft, is suspended a little ore. The lode in the same level south has improved in character, with a branch of lead yielding ¼ ton per fathom. No. 1 stop, in the back of the 10 south, is worked cut for ore, but a rise is being put up to the adit to prove the ground. No. 3 stop, in the back of the 60, has holed to the intermediate level against a cross-course, and continues to look well, yielding 1 ton of lead and 2 tons of calamine per fathom. In the intermediate level, south from No. 2 adit winze the ore still holds out, but we seem near the end of it, producing 1 ton of lead and 1 ton of calamine per fathom. No. 4 stop, in the back of the 40, has holed to the intermediate level against a cross-course, and continues to look well, yielding 1 ton of lead and 2 tons of calamine per fathom. In the 40, east of the same shaft, the lode is divided into two parts, each containing a little lead. The lode in the 80, west of Kennedy's shaft, is regular, but unproductive. In the 90, west of Lowndes' shaft, the lode is chiefly composed of carbonate of lime, carrying a nice branch of lead, worth ¼ ton per fathom. The lode in the same level east is changeable, and now produces ¼ ton per fathom. In the 80, west of Kennedy's shaft, below the 80, good progress is being made. The ground in Caro's shaft, below the 80, is very bad for sinking though. The sinking of Abercrombie's shaft from the 25 to the 35 has been commenced since the 25, and the lode is small and poor. The lode in Olivares winze, below the 150, is quite unproductive.

Los Salidos: The lode in the 60, west of Buenos Amigos engine-shaft, has improved, and yields ¾ ton per fathom. The 110, west of San Carlos shaft, is opening a cross course, and the lode has become disordered. In the 85, east of

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the directors have declared a dividend of 12s. per share. Van Consoles, 2½ to 2½; the lode in the bottom of this mine is reported as producing good quantities of lead ores, and the main shaft is being sunk with all speed, and expected to reach the lode in about 12 fms. further sinking. Cathedral, 20s. to 25s.; a good copper mine is said to be opening up here; the last sale was 30 tons, and the next will be 50 tons. P. Rose (Tin), 20 to 22½; Rookhope Valley, West Frances, 9 to 9½; Wheel Pevor, 5½ to 5½; West Basset, 6 to 6½; West Frances, 9 to 9½; Birdseye, 2 to 2½; Cedar Creek, 1½ to 1½; Chontales, 7s. 6d. to 12s. 6d.; Eberhardt and Aurora, 1½ to 4½; Emma, 1 to 1½; Flagstaff, 2½ to 2½; Last Chance, 1½ to 1½; Malpas, 16s. to 18s. Javali have been largely dealt in, and leave off 16s. 6d. New Quebrada, 4½ to 4½; Richmond, 7½ to 7½; St. John del Rey, 29½ to 30½; Sweetland Creek, 2½ to 2½; Tecoma, 1½ to 1½.

The Market for Mine Shares on the Stock Exchange during the week has been fairly active, a good business having been transacted in lead and copper descriptions. Van shares have remained steady, with an upward indication, which has been stimulated by the declaration of a quarterly dividend of 12s. per share. Other home mines have also considerably fluctuated, but any tendency towards depression has been checked by investment purchases. The general aspect of the market may be regarded as much more favourable than for some time past.

Gold quartz mining in Wales has assumed an important aspect during the past month, in consequence of the operations at the Gold Company's mine at Dolgelly, where 20 heads of stamps are employed crushing gold quartz, which, it is alleged, will yield 1 to 1½ oz. per ton. There has been considerable excitement in the shares, which, after advancing to ½, 1, have receded to ½. The "clean-up" is expected next week, and if the result is as satisfactory as anticipated, it seems probable that as much speculation will be attracted to gold mining at home as abroad. Influential parties have secured gold mines at the Clogau Mine, and a considerable body of quartz has been operated on, which has resulted in a most satisfactory gold produce.

The Foreign Gold Quartz Mines have been more actively dealt in, and an advance has been established in the price of St. John del Rey and Port Phillip. St. John del Rey close 300 to 305. Don Pedro, 9½ to 11½; Sierra Buttes, 1½ to 2½; Plumas Eureka, 1½ to 1½; London and California, 2½ to 3; Independence, 2½ to 3. The Californian Mines have attracted less attention than usual, although the advices are satisfactory. Port Phillip, ½ to ¾; a telegram received yesterday (Friday) morning, reports the clean-up for the past month as averaging 5 dwts. per ton, whilst two of the reefs respectively yield 8 and 12 dwts. per ton. Chontales, ½ to ¾. Javali, ½ to 1; the report, which is considered satisfactory, has had a favourable effect on the market, and it is considered that this property, if fully and energetically developed, may yet realise the expectations of the original promoters.

In silver mines there has been much less doing, although in Eberhardt and Aurora shares some considerable transactions have been recorded, and close 4½ to 4½, with a firm appearance; the advices, which are considered satisfactory, state that the central incline has been sunk a further 11 ft., making a total depth of 360 ft. The mine is reported to be looking well, the ore good, and making north, towards the Ward Beecher ground, having the appearance of connecting with a large body of ore. Owing to a severe snowstorm, the mill had not been re-started. Richmond Consolidated, 7 to 7½; cablegram received: "Week's run, \$43,000. The make of bullion for the season is \$1,991,000. The make since Sept. 1 amounts to \$1,288,000." We are informed that the main shaft is timbered down to 500 ft., that the drift started from it at the 500 to cut the main lode is through, and that a further depth of 30 ft. has been attained in the winze sunk at the end of the drift started from the 400 of the main shaft, thus making a total depth in ore in the winze of 200 feet. As the cross-cut at 70 ft. up from the present bottom of the winze proved the width of the lode between the hanging and footwall to be 70 ft., and the drift at right angles to the cross-cut was driven 90 ft. forward in ore, still leaving a good breast of ore, some idea can be formed of the reserves in this advanced portion of the main lode. The estimated gross profits for February are reported to amount to 13,000. Flagstaff shares have remained firm at 2½ to 2½; the negotiations with the vendor are progressing satisfactorily, and the mine is reported to be fully maintaining its value. Last Chance have improved to 1½ to 1½, upon a rumour that the vein has been cut in the deep adit. The tunnel is said to have struck the vein at a distance of between 450 and 500 ft. from the surface. The ledge is said to be larger at the point where the tunnel has tapped it than at any point nearer the surface, and the ore of a higher grade. Tecoma, 1½ to 1½; the first instalment (5000l.) under the lease has been paid, and the vendor has consented to some important modifications in his agreement greatly in favour of the company's shareholders. Emma shares are nominally quoted 1 to 1½; in pursuance of an order of the Court of Chancery the transfer books will be closed until further notice. From the statement which appears in another column, it seems that the application for a winding-up petition was opposed on behalf of the holders of 23,000 shares, of whom, it is stated, at least one-half are original shareholders. Mineral Hill letters advise that seven of the mines have been let on lease to the discharged miners, upon the condition that the company are to receive one-fourth of all the ore broken; the cost, it is stated, will be considerably reduced, and small lots of ore come to the mill without cost to the company: 60 tons of ore, of an average of \$45 per ton, were broken during the week ending March 8. In reply to several enquiries as to Camp Floyd, it may be mentioned that the company has been resuscitated, and those shareholders who have not applied will not, it is to be feared, receive anything for their interest in the original company. The latest news confirm to a certain extent the original statements made as to the value of the property, and cinabar, it is stated, has been discovered in fair quantities.

Hydraulic Gold Mine shares are quiet. Most of the companies are doing well, but the fear of a short water season deters intending investors. Although it is likely that the water may not hold out so long as last year, yet the storms of March and April may lengthen the time beyond the present expectations. The shares remain steady at quotations. Blue Tent, 5 to 5½; washing is steadily progressing at both Enterprise and South Yuba claims, and the agent expresses his intention of making an early clear-up. Cedar Creek, 1½ to 1½; we do not hear of any news from this company. The agent at date of last advices was washing with all the water he could command, and, it is expected, with good results. Sweetland Creek, 2½ to 2½; by some inadvertence the telegram referred to in our last impression was left out; we print it, however, in another column. The substance of it was given in our remarks. It is most satisfactory that the water question is settled, as this was the only matter interfering with the continued prosperity of the company. Birdseye Creek, 2½ to 2½; the superintendent reports everything progressing as usual. He was gradually getting into the bank at Neece and West claim, and as the drifted ground was passed the results, it is anticipated, will be better.

In Copper Mines the tendency points to improvement, and shares change hands at full quotations. The Tharsis Company propose to pay a dividend of 25 per cent. at the forthcoming meeting. Cape Copper, 31 to 32 (ex div.); Rio Tinto, 8½ to 9½; New Quebrada, 4½ to 4½; Russia Copper, 2½ to 2½; Panulicillo, 1½ to 1½.

In Lead Mines a good business has been transacted. Roman Graves and Tankerville are firm. Pennerley have been inquired for, and close a shade better; these shares have been somewhat neglected, but are now receiving attention. The company has been making steady profits since the last annual meeting, and has its original working capital intact. Van, 23 to 25; the cross-cutting through the lode and the 90 fm. level is proceeding satisfactorily, and the end is worth 200 per cubic fathom. The level will now be driven west to g. under the rich course of ore gone down in bottom of the 75. This level, 75, is now completely drained, and the end west is worth 700 per cubic fathom. All other parts without alteration. The directors have this week declared a dividend of 12s. per share, payable on and after the 21st inst. This is an improved dividend, the last being 10s. per share. It will be seen from the

report of the annual meeting we published last week that a saving of some 4000l. per annum was to be effected by the new dressing machinery, and the company now appear to be beginning to feel some benefit from it. Shares are firm, at quotations. Van Consoles, 2½ to 2½; a fair amount of business has been done; the lode in bottom of the mine continues to look well, and the drawing-shaft and main shaft are being pushed down with all speed; 20 tons of lead were sold on Saturday last, at 13½ 12s. 6d. Great West Van, 10s. to 20s.; the lode in the cross-cut from Eliza's shaft is expected to be met with at an early date.

Grogwinion, 3 to 3½; the latest report is most satisfactory, rapid progress is being made in sinking the main shaft from the intermediate to the deep adit level, and it continues to go down in rich ore. In a few months' time the profits will be nearly doubled. Wye Valley, 3 to 3½; another parcel of 25 tons of ore was sold on March 31, and the manager expects to sell 50 or 60 tons more in a week or ten days. Every part of the mine will soon be thoroughly ventilated by the new shafts, and the returns will then be steadily increased. The new self-acting dressing machinery is now working satisfactorily. Melindur Valley, 2½ to 3; the last report is by far the best that has been received since the company was formed. The bottom of the shaft is now in rich ore—a most satisfactory indication of the mine proving rich in depth, and the 14 is being driven in a lode worth about 30 cwt. of lead per fathom. The stopes in the adit level continue to yield well, and the cross-cut being driven towards the Cwm Erfin lode improves as it advances. The yield of ore from the mine is well maintained, and the directors intend to erect new crushing machinery, whereby a great saving in labour cost will be effected. Llanidloes Lead, 3 to 3½; the new engine is being erected, and as soon as it is completed the mine will be forked, and returns of lead made from the rich lode left standing by the old workers when the mine was drowned out. West Goginan, ½ to 1. Bog, ½ to ¾; the report in another column is very encouraging. It would appear that at the 163, on Whiteside lode, a part of the lode is standing north, and a cross-cut put out there has resulted in the driving of a branch containing lead and blende. Other parts of the mine are also looking well. Pennerley, 1½ to 1½; there is no change reported this week; we hear, however, that the mine is looking much better than for some time past, and has been making a steady profit for some months past. Shares are slightly in demand at quotation.

In Tin Mines business has been restricted. Great Vor, ½ to ¾; from the details of the quarterly meeting, reported elsewhere, it will be seen that the accounts, made up to the day of the meeting, showed a balance against the mines of 516l., after allowing for a sum of 688l. as a charge on the company for relinquished shares. In addition to which the Chairman stated they had two spare engines, estimated to be worth 500l. or 600l., besides other materials unsold, so that he thought they might say they were in a very satisfactory financial position. The agent's report stated that the water is now drained to the 40 in West Metal shaft, and in another two months he expects to see the bottom of the mines. So far as seen, the agent is well pleased with the appearance of the mines, and believes a good lode will be met with in developing the western ground. The cost is about 250l. per month, to help which they are clearing up the tin around the old dressing-floors, and selling about 2 tons per month. It is very satisfactory to find that the work in the mines has all been carried on during the past 12 months out of the proceeds of old materials sold, as no call has been made since March, 1874. Penstruthal, 11s. to 13s.; the mine continues to open out most satisfactorily. The lode in the shaft and bottom levels is improving daily. Cathedral, 20s. to 25s.; a good copper mine is being opened up here. The next sale of ore, about 50 tons, will be the first week in May.

Subjoined are the closing quotations:—
Asheton, 1½ to 1½; Bog, 10s. to 12s. 6d.; Carn Brea, 4s. to 4s.; Devon Great Consols, 1½ to 1½; Dolcoath, 4s. to 4s.; East Caradon, 1 to 1½; East Lovell, 7½ to 8; Great Laxey, 11½ to 12; Great Wheal Vor, ¾ to ¾; Hington Down, ¾ to ¾; Marke Valley, ¾ to ¾; Pennerley, 1½ to 1½; Parys Mountain, ¾ to ¾; Penstruthal, 10s. to 12s.; Roman Gravel, 11½ to 12½; Tincroft, 22 to 23; Tankerville, 11½ to 12; Van, 23 to 25; Van Consoles, 2½ to 2½; West Basset, 6 to 7; West Chiverton, 5 to 5½; Wheal Grenville, 4½ to 4½; Almada and Tiritio, 11 to 13 ex div.; Birdseye Creek, 2½ to 3½; Cedar Creek, 1½ to 1½; Cape Copper, 31 to 32 ex div.; Colorado Terrible, 3½ to 3½; Chontales, ½ to ¾; Don Pedro, 9 to 11½; Eberhardt and Aurora, 4½ to 4½; Emma, 1 to 1½; Flagstaff, 2½ to 2½; Frontino and Bolivia, ¾ to ¾; Gold Run, ¾ to 1; Javali, ½ to 1; Last Chance, 1½ to 1½; Malpas, 16s. to 18s.; Malabar, ½ to ¾; New Quebrada, 4½ to 4½; Rize, ½ to ¾; Richmond Consolidated, 7 to 7½; Sweetland Creek, 2½ to 2½; Sierra Buttes, 2 to 2½; South Aurora, 1½ to 2½; Tecoma, 1½ to 1½; United Mexican, 2½ to 3; Blue Tent, 5 to 5½; Holcombe Valley, 1 to 1½; West Esqair Le, 1½ to 1½; New Pacific, 7s. 6d. to 10s.

COLLIERIES AND IRONWORKS.—The following, with a few others, have been the principal shares dealt in during the week:—Chapel House, Cleve Hill, Ebbw Vale, Great Western, Cardiff and Swansea, West Mostyn, Bilson and Crump, Whitehaven Iron, and Alltall. The directors of the Pearson and Knowles Coal and Iron Company (Limited) have declared an interim dividend for the past half year at the rate of 6 per cent. per annum on each class of shares, leaving the adjustment between them to the annual balance. The directors of the Bettws Llantwit Company (Limited) have announced that the guarantee dividend, at the rate of 10 per cent. per annum, will be payable, on and after the 1st proximo, at the Alliance Bank. There is no market for the shares. Creditors of the Cheap Fuel Supply Association (Limited) are requested to send in their claims to the official liquidator, Mr. James Wadell, Queen Victoria-street, on or before May 1. John Bagwell, 5½ to 6; West Cumberland Iron, 9½ to 10½; Hopkins Gilks, 5 to 6; Bilbao Iron, 4s. to 4½. Owing to the disclosures made by the Chairman at the recent annual meeting, and the apparent worthlessness of the coal, Silkstone Fall shares have been freely offered for a few shillings, and are nominally quoted ¼ to ½. Had the shareholders courageously faced the situation, and resolved to write off as loss 4l. from the 5l. shares, instead of offering the question to another year, we believe the shares would fetch much more in the market. Albion Steel, 2½ to 3; Brierley House, 4½ to 4½; Cleve Hill, 4s. to 4s., with some slight inquiry; Leigh and Wilkes Barre Coal, 5½ to 6; New Sharlston continue to drop; it is believed the costly concern is not making a penny profit, and meanwhile the huge mortgage—a part of which must be paid off this year—hangs like a millstone round the necks of the shareholders. Business has been done during the week at 3½. Boldock Vaughan, 5½ to 5½; Charlton Iron, 13 to 15; Whitehaven Iron, 4 to 5; Original Hartlepool, 5½ to 5½; Bilson and Crump, 9½ to 10½; Ebbw Vale, 19½ to 20; Chillingham Iron, 5½ to 6½; Palmer's Shipbuilding, 9½, 8½ dis.; Darlington Iron, 7 to 7½; Skerine Iron, 1 to 1½. At the meeting yesterday, at Birmingham, of ironmasters and merchants, there was a good attendance, but no business of importance was transacted, buyers still holding back, in the hopes of still lower prices. It is thought there will not be any great demand before quarter day either for branded or unbranded iron. Orders, however, in sheets and plates appear to be more plentiful. All mine pig-iron is quoted from 5l. to 5½l. per ton; port mine, 4l.; and common cinder pig, 3l. to 3½l.; Great Western Colliery, 11 to 11½; Cardiff and Swansea, 4½ to 4½; West Mostyn, 3½ to 4.

At Redruth Ticking, on Thursday, 1655 tons of copper ore were sold, realising 3849l. 15s. The particulars of the sale were—Average standard, 107l. 11s.; average produce, 7½; average price per ton, 5l. 1s.; quantity of fine copper, 119 tons 19 cwt. The following are the particulars of the sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Mar. 4.	662	1116	12	0	63	158. 4d.
" 15.	3867	112	13	0	63	4. 14
April 1.	1655	107	11	0	73	5. 1
						13 11
						69 11 6

Compared with the last sale, the decline has been in the standard 2l. 10s., and in the price per ton of ore about 3s. 6d.

The Oriental Bank Corporation, as agents for the National Bank of Chili, are inviting subscriptions at 88½ per cent. for 1,000,000l. sterling of the CHILIAN GOVERNMENT FIVE PER CENT. LOAN, 1875, authorised by law of the Republic dated Nov. 12 last. The total amount authorised was 1,900,000l., in bonds of 1000l., 500l., and 100l. each, redeemable at par by an accumulative sinking fund of 2 per cent. per annum by semi-annual drawings, and it is to be raised on the special security of the Government railways from San Fernando to Palmilla, and from San Felipe to Santa Rosa de los Andes, and of the Great Mole and Bonded Stores at Valparaiso, as well as on the general security of the income and property of the State. The present issue of 1,000,000l. is to be applied to the redemption of internal debts for public works, and the balance of 900,000l. is to be applied to the redemption of the Seven per Cent. External Loan of 1866. Chilean securities have always enjoyed a very high reputation in the market, and the present bonds give about 5½ per cent. as an investment. The prospectus will be found in another column.

The Crown Colliery Company are inviting subscriptions for 1500 first mortgage debentures of 10l. each, bearing 10 per cent. interest, the first year's interest being secured by 1500l. having been deposited in the names of trustees. The company's collieries are situated at Warmley, Gloucestershire, within 5 miles of Bristol and 8 miles of Bath. The properties are intersected by the Midland Railway and the Great Western Railway's Tramway, the Warmley Station on the former being within 60 yards from the pit's mouth. The property consists of about 340 acres, held under agreements for lease for 30 years from June and September, 1873, at a dead rent of 400l. per annum, merging into a royalty of 9d. per ton, and 50l. per annum rent of surface lands and cottages. There are numerous seams of

coal under the property, which are divided into three series, containing in the aggregate 8 ft., 17 ft. 10 in., and 17 ft. 6 in. respectively. The reserve is practically inexhaustible; the second series, which is now being worked, after making ample allowances for pillars, waste, &c., contains over 5,000,000 tons of unworked coal, or sufficient in this series of seams alone to produce an output of 500 tons per day for 40 years. The coal is household of the best description, and in great demand. Both ironstone and fire-clay exist on the property, and can be worked to form an appreciable item in the profits. The prospectus states that the ventilation is good, there is no gas, and naked lights are used throughout the colliery. The present output, which is rapidly increasing, is 50 tons per day, but it can, and will soon, be brought up to at least 200 tons per day. This, at the present selling price of the coal—which is in great demand at the pit's mouth, at 20s. per ton large, 15s. brush, and 8s. 4d. slack, would yield a large return, as cost of getting, including every expense, is only 7s. 6d.; so it may be safely assumed that profits will be at least 10,800l. per annum, whereas the amount required to pay interest on and redeem the debentures is only 2850l. per annum, leaving a balance of 8250l. per annum for distribution on the share capital. The same rate of profits, calculated upon the present output of 50 tons per day, shows the return of 2700l., or more than sufficient to pay the interest on and the redemption of the debentures. The issue of these debentures will enable the directors to pay off the balance of their purchase-moneys, and to further develop the collieries.

We are informed that Capt. Richard Barkell, who for some years has been manager of the Bradda Mines, has been appointed mine manager at the Falcon Cliff Mines, Isle of Man, Capt. Nicholas Bryant having accepted an appointment in Nova Scotia.

The Cesena Sulphur Company have given notice that the dividend of 5 per cent. upon the "A" shares for 1874, declared at the meeting of the company on Thursday, will be payable on April 15.

ORES, &c.

I BUY at the highest prices:—
LEAD ORES.—LEAD-SILVER ORES.—SILVER-LEAD ORES.
SILVER-LEAD.—HARD LEAD.—ANTIMONIAL LEAD.
GOLD AND SILVER ORES.
ZINC AND LEAD ORES MIXED TOGETHER.

Particulars by letter. ARMAND FALLIZE, Ingenieur, à Liège (Belgium)

D. ERNEST MELLISS, A.M., Ph.D.,
MINING ENGINEER AND GEOLOGIST,
52, BROADWAY, NEW YORK, UNITED STATES.

RICHARD P. ROTHWELL, C.E., M.E.,
MINING AND CIVIL ENGINEER,
27, PARK PLACE, NEW YORK.

Vice-President of the American Institute of Mining Engineers; Member of the American Society of Civil Engineers; of the North of England Institute of Mining Engineers; of the Geological Society of France, &c., &c.; Editor of the Engineering and Mining Journal, New York. Reports on Mineral Properties, and on the Working and Management of Mines. ADVISES AS TO THE VALUE OF AMERICAN MINING STOCKS AND INVESTMENTS.

A thorough technical education and long practical experience in Mining in various parts of Europe and America, enable Mr. Rothwell to give SAFE ADVICE; and his position as Editor of the leading Mining Paper of America affords him unusual facilities for knowing the ACTUAL VALUE of American Mining Securities and the standing of companies. References: The Presiding Officers of the American Institute of Mining Engineers, and the American Society of Civil Engineers.

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COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.
DISTRICT UNDER THE CHARGE OF RALPH MOORE, Esq., H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, will be HELD on the 6th day of May, and CANDIDATES INTENDING TO PRESENT THEMSELVES AT SUCH EXAMINATION must, on or before the 24th day of April, notify such intention to the Secretary of the Board of the above-mentioned District, from whom all information as to particulars can be obtained.
By order of the Board,
R. CALDER, Secretary,
296, Renfrew-street, Glasgow.

N.B.—Persons who do not reside within the district are equally eligible for examination with those who do.

THE IRON AND STEEL INSTITUTE.

THE ANNUAL GENERAL MEETING will be HELD (by permission of the Council of the Institution of Civil Engineers) at No. 25, Great George-street, Westminster, on WEDNESDAY, THURSDAY, and FRIDAY, May 8th, 9th, and 10th. The Council of the Institute are open to receive communications, bearing upon the Iron and Steel Trades, from gentlemen desirous of submitting papers to the above-named meeting. Proposal forms received up to the middle of April will be in time for the election of members at the annual meeting.

The last issue of the "Journal of the Institute" can be obtained from the publishers, Messrs. Spon, 45, Charing Cross, S.W., price 7s. 6d.
JNO. JONES, General Secretary.

7, Westminster Chambers, London; and Royal Exchange, Middlesbrough.

A LIMITED COMPANY OWNS A GROUP of very promising SILVER-LEAD MINES, situated in the PROVINCE of GRANADA, SPAIN.

A large sum has been expended in the purchase and development of the property under an eminent engineer, but the works are now stopped for want of funds. It is DESIRED TO FIND A PARTY willing to FURNISH from £1000 to £3000 for the PURPOSE OF CONTINUING THE WORKS.

A liberal bonus will be given to such investor, and, if desired, the entire expenditure placed under his control, provided he will take charge of the mine on the spot, in which case a fixed salary would be given.

Attention is called to an article, headed "A Spanish El Dorado," which appeared in the Daily News of the 1st April, 1875, communicated by their Madrid Correspondent, and which gave an account of the great value of the mining property in the immediate neighbourhood of these mines.

Address, "A. B.," care of Messrs. Sheppard and Riley, Solicitors, 39A, Moorgate-street, E.C.

M. R. J. S. MERRILL,
ANALYTICAL CHEMIST,
SWANSEA.

Notices to Correspondents.

ASBESTOS.—In last week's Journal I find an enquiry from "W. A. H." as to where he could obtain Asbestos in quantity. I should be happy to get him any quantity of it, if he will only state what kind or quality he requires, short or long, silky, cottony, flaxy, or woody.—T. C.: *Beds, March 30.*

ASBESTOS.—If "W. A. H." would send me his name and address I could forward him a sample of good average quality; probably there would be no difficulty in supplying a few hundredweights, if price was suitable.—MICHAEL WILLIAMS BAWDEN: *General Assaying Office, Luskard, Cornwall.*

ASBESTOS.—If the enquirer after Asbestos will call upon me (or write) we may make terms.—A. McCauley: *29, Norfolk-street, Strand, London.*

SKIMMING.—"C. H. A." (Burry Port).—You will not be at all likely to get the price you mention; 7s. or 8s. per ton or less would be much nearer the price. It is difficult to understand how an alloy of 40 per cent. zinc, 60 per cent. lead, and 12 ozs. to the ton silver could be obtained as skimmings in the process of desilvering lead by any recognised process. Your letter shall be sent to a purchaser of this description of material, who will no doubt communicate with you.

EXTRACTING GOLD FROM PYRITES.—"Zero" (Fleet-street).—Claudet's process of extracting gold from pyrites, referred to in the report of the Victorian Pyrites Board, an abstract of which was published last week, was described in the *Mining Journal* at the time when Mr. John A. Phillips read a paper before the Society of Arts upon the process in operation at the Widnes Metal Company's works. It is now two or three years ago.

GOLD MINING IN WALES.—Being fully convinced of the existence of commercially valuable auriferous deposits in Wales, I was delighted to read in last week's *Journal* that in North Wales gold mining has become an established fact, as it may be degrees extend to the South, for we have plenty of gold-bearing quartz in Pembrokeshire. The little work at Fronlwyd Llanfyrnach will, no doubt, be in full operation in a week or ten days, although it is temporarily stopped, through a defective pump and the great body of water that flowed into the shaft.—W. H. D.

MINERS' MANUAL.—"M. E."—The book to which you refer was "Rickard's Miners Manual," the price of which was 10s. 6d., not 6s., but it has long been out of print. There are excellent little works on mensuration, and on arithmetic, in the Irish Commissioners' series (Thorn, Dublin), about 1s. each.

MACHINE DRILLING.—"R. P." (Truro).—The latest report from the St. Gothard Tunnel states that 42½ metres were driven in the week; this is about 3½ fms. per day, and is by no means the highest speed attained. Sir George Denys has shown that with the McKean drill he has progressed about three times as fast as by hand, and at rather less cost than by hand labour, but he is a practical miner, and at the same time possessed of scientific knowledge which enables him to utilise the power of a machine-drill. Where an attempt is made to work at excessive speed economy must be to some extent sacrificed. In the case you mention three times the speed of hand labour would give you nearly 15 fathoms per month without increasing the monthly cost; to get 20 fathoms monthly speed would, it is said, augment the cost per fathom.

MINING BY MACHINERY.—"J. D." (City).—It is said that in the best practice of long tunnelling in America, where the advance heading was driven 8 ft. by 8 ft., the size of drill used was 2½ in., believed to be a Burlington. Three holes were first put in, forming a triangle, base upwards, and with 2 ft. sides in the centre of the face, the holes (40 in. deep) converging so that at the bottom they were 6 in. apart. Dynamite was employed as an explosive, and the three holes were fired simultaneously by electricity. For the enlargement to 8 ft. by 8 ft. they put in 24 holes, all straight—that is, five each in top, bottom, and sides, and one in each corner—all 40 in. deep, as before. The progress was quite great and satisfactory. This answers an enquiry in the *Mining Journal* some weeks back.—R. P.: *Yale, March 10.*

THE TREATMENT OF COPPER ORES.—Permit me to correct an error in your issue of last week, page 327, under the above heading. In your report of the Great Snowdon Mountain Copper Mining Company's meeting of the 24th ult., I am not the patron of the process referred to, but am interested in it.—J. P. WILKES.

Received.—"C. P."—"E. N."—"Shareholder" (Newfoundland Mining Company).—"E. H. J."—"M. N."—"M. T. G." (Sweetland Creek) See Stock Exchange Article this week.—"B. H."—"W. N." (Whitecroft).—"H. N." We shall be glad to hear again.—"H. C."—"H. H. P." (Camp Floyd) See Stock Exchange Article this week.—"Unity."—"Mentor."

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, APRIL 3, 1875.

PROGRESS OF OUR COAL MINING DISTRICTS.

The present is certainly not an inopportune time to notice the progress that has been made of late years in the development of our coal fields in the various districts throughout the kingdom where that valuable mineral is being worked. Two or three years ago the fact of some 40,000 or 50,000 miners being idle owing to a strike and lock-out would have had a most serious effect upon the price of coal both at home and abroad; but now it makes not the slightest difference one way or the other, for fuel is so abundant that markets are overstocked, whilst our exports of it have of late shown a sensible decline. Not only so, but the demand is likely to fall off to a still greater extent, owing to the development of the mineral resources of many European States in particular who have long been our very best customers. France has been taking coal from us at the rate of nearly two and a-half million tons a year; but the Government is now engaged in offering inducements to capitalists to open out the extensive coal fields in that country. Prussia and Russia are doing something similar, so that the question of raising coal in almost every part of Europe where it is known to exist is about the most prominent that is now being discussed. In other parts of the world, civilised as well as semi-civilised nations thoroughly understand that coal is one of the most valuable of products, and that by it they can furnish themselves with articles for which they are now dependent on England. These simple truths should not be lost sight of by those who are struggling to maintain wages at a rate which it is said will not admit of their employers successfully competing with other mine-owners at home and abroad. They should also note that the stoppage of so many collieries in South Wales, and the idleness of something like 40,000 miners, as we have before stated, is a positive relief to the trade more than otherwise, for it does not raise prices, diminish the exports of coal, or raise the wages of miners in other districts; on the contrary, we find that in Northumberland and Yorkshire and Derbyshire, where there are the most powerful and wealthy organisations of workmen in the kingdom, the miners have agreed to accept a reduction of wages as the inevitable consequence of the present quiet state of the trade. Our object, however, is to notice the past production of our coal fields, contrasting it with what has been raised more recently, and pointing out the rate of increase in different counties, and so showing where the advance in prosperity has been the greatest. The greatness of a country may be inferred from the progress it makes in the increase of its manufactures and exports, and the social advancement of its workers, and the same rule applies to a county or a district. So, if we take the various mining counties in the kingdom, we find that whilst some have largely increased their mineral production others have made little or no progress in that direction. And it is worthy of special notice that where the output of coal has increased the most there the workmen and their families are much better off, and have more powerful organisations with larger funds than those districts where disputes have been frequent. If we take the places where strikes have been of an almost chronic character, we find the miner not much better off than when his wages were little more than half what they have been during the last year or two, so that years of toil had in no way improved his condition. On the other hand, there are districts, even where Unionism is very powerful, where the collier is the proprietor of his own house as well as others, whilst his home can boast of a piano and other luxuries, which at one time were supposed to be the exclusive privilege of the wealthy middle and upper classes. Coal has increased of late years with much greater rapidity than formerly considering the increase of population, due to the progress made in the make of pig, manufactured iron, steel, &c. In 1839 the quantity raised was estimated by Sir H. DE LA BECHE at only 36,000,000 tons, and in 1852 Mr. DICKINSON considered the output was 54,000,000 tons. But in 1873 the output was more than 127,000,000 tons, being an increase in 21 years of about 134 per cent. If, however, we take the returns for the seven years ending in 1873 we find that the rate of increase was nearly 22 per cent. From these two periods, 1837 and 1873—the latter being the year in which the price of coal reached the highest point ever known, and when miners' wages were also higher than ever they were before—we purpose showing the rate of progress made in the various counties as to the production of coal, and from which we think a moral, so to speak,

may be drawn with advantage by the most obtuse of colliers that can now be found on strike. We find that the quantity of coal raised was as follows:—

	1867.	1873.
Durham and Northumberland ..Tons	24,867,444	29,640,385
Cumberland ..	1,512,514	1,747,064
Westmoreland ..	—	1,972
Yorkshire ..	9,843,575	15,311,778
Derbyshire, Notts, &c.	8,006,400	11,568,000
Staffordshire and Worcestershire ..	12,526,554	13,355,578
Lancashire ..	12,841,500	17,060,000
Cheshire ..	935,000	1,150,500
Shropshire ..	1,558,500	1,870,000
Gloucester and Somersetshire ..	1,975,000	1,868,740
Monmouthshire ..	4,589,500	4,500,000
South Wales ..	9,082,500	9,841,523
North Wales ..	2,371,250	2,450,000
Scotland ..	14,125,943	16,857,772
Ireland ..	125,000	103,435

Total .. 104,500,480 .. 127,016,747

From a glance at these figures it will be seen that whilst some of the counties show an enormous increase in production others have been almost stationary. But a useful lesson may be gathered by those interested in noticing the fact that the output of coal has been the greatest where there has been comparative freedom from strikes. In Yorkshire the increase over 1867 was equal to 50 per cent., so that the extra wages paid could not have been less than 1,500,000l. This is the result of there having been no strike of any moment for several years. Lancashire was in a similar position, and we find that the production had increased nearly 33 per cent., and Durham and Northumberland, for a similar reason, about 20 per cent. The coal field of Derbyshire, Notts, and Leicestershire also shows to advantage. But we find the reverse side of the picture when we turn to South Wales and Monmouthshire, which is almost a part of the Principality. The great coal field of South Wales is the largest in the kingdom, with the exception of the Clyde basin, and extends on one side to Pontypool, in Monmouthshire. The coal itself is also about the easiest to get of any, requiring but holding, for if left for some few hours it falls of itself. Yet, with all these advantages, we find that it produced little more coal in 1873—when wages were so very high—than it did in 1867, and this to a considerable extent can only be attributed to the great strike in the former year, when the loss of wages must have been very great indeed. Monmouthshire was in a similar position from the same cause. If we compare Yorkshire with South Wales and Monmouthshire, it will be seen that whilst wages in the former had been increased by at least 1,500,000l. in the latter the increase was nothing in comparison to it. All things considered, the productive power of South Wales should have been greater than that of Yorkshire, but agitators and their advice that much was to be gained by a strike led to very different results. The chronicle of the year 1875 will have to report an exactly similar state of things as regards the production of coal in South Wales, which will again show to disadvantage when compared with any other part of the kingdom. These plain truths should be well weighed by the men, who will see how much they have lost by their vain attempts to keep up wages beyond what the state of trade would admit of.

THE COPPER TRADE.

During the quarter ending March 31 the quantity of copper ore, the produce of Cornwall and Devonshire, sold at the Cornish Ticketing, was 10,960 tons, which contained 748 tons 12 cwt. fine copper, and realised 53,953l. 13s., being equal to an average of 4l. 18s. 6d. per ton of ore, and 72l. 1s. per ton of copper in the ore. During the same period the British, colonial, and foreign ores sold at Swansea amounted to 4335 tons, which contained 1046 tons 3 cwt. of fine copper, and realised 84,946l. 3s. 6d., being equal to an average of 19l. 12s. per ton of ore, and 81l. 4s. per ton of copper in the ore. The average produce of the ore sold at the Cornish Ticketings was 613-16 per cent., whilst that sold at Swansea gave an average produce of 24½ per cent. From this it will be seen that the aggregate sales by ticket were 15,295 tons of ore, containing 1794 tons 15 cwt. of fine copper, and realising 138,899l. 16s. 6d. The subjoined is a summary of the periodical sales at the Cornish and Swansea Ticketings respectively. The ores sold at the Cornish Ticketings were—

Date.	Standard.	Prod.	Price.	Per unit.	Tons.	Fine cop.	Amount.
Jan. 21...	£111 14 0	0 7½	£4 18 6	14s. 4d.	3468	238t. 10c.	£17,108 10 6
Feb. 4...	108 19 0	0 7½	5 5 0	14 3½	1497	109 17	7,853 1 6
" 18...	113 16 0	0 6½	4 19 0	14 8	1966	133 3	9,744 8 6
Mar. 4...	116 12 0	0 6½	5 2 0	15 4	662	44 1	3,374 16 0
" 18...	112 13 0	0 6½	4 14 0	14 3	3367	223 1	15,872 16 0
Total for the quarter					10,960	748 12	£53,953 13 0
Quarter ending Dec., 1874					12,959	917 17	£67,399 19 6
Quarter ending Sept., 1874					12,220	882 2	£57,488 8 0
Quarter ending June, 1874					12,013	904 11	£57,692 15 0
Total for the year					48,152	3453	£2,236,533 15 6
Showing a quarterly average of					12,038	863 5	£59,133 9 0
Corresponding quarter March, 1874 ..					13,045	919 8	£52,879 9 0

The ores sold at the Swansea Ticketings were—

Date.	Standard.	Prod.	Price.	Per unit.	Tons.	Fine cop.	Amount.
Jan. 26...	£101 17 6	16 11-16	£13 10 10	16s. 0d.	1273	212t. 11c.	£16,885 14 0
Feb. 9...	103 3 0	24½	20 7 10	16 5	1096	271 5	22,350 12 6
" 23...	102 10 0	31 13-16	26 3 10	16 5	935	297 9	24,492 16 0
Mar. 28...	100 8 0	25 11-16	20 10 0	15 11	1031	264 18	21,117 1 0
Total for the quarter					4335	1046 3	£84,946 3 6
Quarter ending Dec., 1874					5908	1463 8	£121,233 11 0
Quarter ending Sept., 1874					5978	1524 11	£112,938 12 0
Quarter ending June, 1874					6778	1277 8	£94,099 6 0
Total for the year					29,089	6311 10	£413,217 12 6
Showing a quarterly average of					7,272	1527 18	£103,304 8 0
Corresponding quarter March, 1874 ..					7,558	1230 11	£99,246 5 6

PROGRESS OF SOUTH AUSTRALIA.

It is just 40 years since Lord GLENELG, the then Secretary of the Colonies, penned his famous despatch, in which he deprecated straggling colonisation in Australia. Lord GLENELG—who was, no doubt, a well-meaning, although a mistaken (or, at any rate, not an infallible) statesman—wished to confine the efforts which were being made to develop the resources of Australia to New South Wales; but even the routine of the Colonial Office was not powerful enough to cope with destiny, and destiny had provided for the establishment of several important colonies upon the Australian coast, in addition to New South Wales. Lord GLENELG does not appear to have troubled himself very much about Western Australia, although in 1835 it had passed through six years of struggling existence; but he strongly objected to the establishment of a settlement at Port Phillip, his great desire being to see the Australians devote all their strength to the development of a powerful young nation in New South Wales. However, as we have already observed, destiny was against Lord GLENELG. In 1836, a band of stout-hearted explorers founded a new Antipodean colony, under the style and title of South Australia; the discovery of gold in 1850 soon elevated Port Phillip to the dignity of an independent colony, under the name of Victoria; and in 1859 the Government of Lord DERBY carved another great slice of territory off New South Wales, and called it Queensland. So now Australia has four important settlements instead of the one proposed by Lord GLENELG 40 years since.

It is with South Australia that we have now more particularly to do. For years the colony struggled against apparently hopeless difficulties. Even the Government officials were sorely tried, since they had sometimes to go without their salaries, and it is not altogether clear that if Lord STANLEY had not invoked the aid of the Imperial Parliament in 1842, the whole colony would not have collapsed altogether—at any rate, for a time. However, in 1842 Parliament voted a good round sum in aid of the settlement, which was thus placed upon its legs again. In 1845 came the discovery of the famous Burra Burra Mines, and from that time South Australia prospered. It was found as years went by that the colony was not only an agricultural settlement, but that it also possessed valuable mineral resources. In 1850 the excitement attending the marvellous

gold discoveries made in Victoria and New South Wales slightly checked the progress of South Australia; but still the general commerce of the colony was onwards, more especially as population steadily accumulated, and it was found that gold also existed here and there in the South Australian soil. The last 25 years have been a period of marvellous progress for the Australian group, and South Australia has participated fairly enough in the general prosperity. In 1842, as we have already stated, South Australia was so financially waterlogged that Lord STANLEY had to appeal to the Imperial Parliament to save the settlement from public insolvency. In 1873, however, the revenue of the colony had grown to 937,649l., and last year it further expanded to 1,003,820l., showing an increase of 66,171l. during the past 12 months. The expenditure of the South Australian Government appears to have slightly outstripped its revenue last year, but the credit of the Colonial Treasury is now so excellent that it can raise money in the London market at somewhere about 4½ per cent. per annum. The charge of the bonded debt of the colony is now 170,000l. per annum, and it is gradually increasing; but the bonds of South Australia have the merit attaching to the bonds of the other members of the Australian group of having been issued for reproductive purposes. With a little prudence, then, on the part of the Colonial Treasury will be enabled to re-establish and maintain an equilibrium between its revenue and expenditure, to raise further loans at close upon 4 per cent. per annum, and to develop to a still greater extent the very considerable natural resources of the colony. Of late, South Australia has been making attempts to turn her iron ore to account. No great progress has yet been made in this direction, but it is at the same time difficult to suppose that the question of the utilisation of South Australian iron will remain neglected now that attention has been directed to it. We may safely predict an important future for South Australia.

COAL MINING IN THE FOREST OF DEAN.—The Flour Mill Colliery, which is situated in the Forest of Dean, is the property of a wealthy London baronet, and it has, though a valuable colliery, been somewhat difficult to work by reason of a continual influx of water, &c. The present manager, Mr. John Prothero, has been signally successful in overcoming obstacles to a profitable development of the mine, and, at last, having drained the pits is commencing to get the coal. The selection of a manager for the gale was, we understand, recently left with an eminent firm of mining engineers in Cardiff, and Mr. Prothero's skill and perseverance has in the locality reflected great credit not only on himself, but upon those who had discernment enough to secure a competent person in a case requiring more than ordinary care and foresight. Mr. Prothero is, we believe, a native of Beaufort, Monmouthshire.

IMPROVED SAFETY-LAMP.—Mr. Landau, whose improved safety-lamp was described in the *Mining Journal* of March 13, visited the Oaks Colliery, Barnsley, on Wednesday, for the purpose of having his lamp tested; and he intends also to visit a colliery in the Newcastle district, with the same object. The result of any experiments which may be made will be duly reported.

COAL AND IRON IN THE UNITED STATES.—The anthracite coal movement of Pennsylvania to March 8 this year amounted to 1,779,446 tons, against 2,181,335 tons in the corresponding period of 1874. The bituminous coal movement of Pennsylvania to March 8 this year amounted to 281,046 tons, against 284,256 tons in the corresponding period of 1874. There has been a strike among the working miners of the Schuylkill, Wyoming, and Lehigh districts. The trustees of the Cincinnati Southern Railroad have let a contract to the Keystone Bridge Company, of Pittsburg, for two iron trestles of a total length of 1410 ft., at \$65,661. It appears that during 1874 the Pennsylvania Railroad Company laid down 10,422 tons of steel rails upon its main line, and 827 tons on its several branches and sidings. Up to Jan. 1, 1875, the company had laid in the main tracks of its main line 76,320 tons of steel rails, or 725 miles of steel rails; it had also laid 1584 tons in the main tracks of its branch roads, and 6887 tons in third and fourth tracks and sidings on its main line and branches, making an aggregate of 84,791 tons of steel rails now in use upon the system.

REPORT FROM MONMOUTH AND SOUTH WALES.

April 1.—The disastrous dispute in this district has now entered upon its fourth month, during which time the loss in wages alone to the colliers has been something like 100,000l. per week, and yet, judging by the tone of the meeting called by Mr. Henry Thomas, formerly miners' agent for the Aberdare district of the Amalgamated Association of Miners, and held at Aberaman, on Wednesday, to take into consideration some means by which the present unhappy state of things could be put a stop to, the end is as far off as ever. At first Mr. Thomas had a difficult matter to get a hearing, but after a time he succeeded, and laid his views before the meeting. He was not, however, fortunate enough to convince the men that they should endeavour to conciliate the masters, and subsequently a resolution was carried pledging the men to continue the struggle. Mr. Thomas will also address the Rhondda Valley to-day, Thursday, and it was agreed to send a deputation of two men to that locality to oppose him, and to lay the decision of the Aberdare men before them. By this it will be seen that the men are as determined as ever, and as long as such a spirit of vindictiveness lasts there is little or no prospect of a settlement being effected. It will be remembered that Mr. Doyle, Government Poor Law Inspector, recently visited the different Unions in the affected district for the purpose of suggesting that the guardians should apply to the masters to open some of their pits, in order that the heavily-taxed ratepayers should be relieved of some portion of their burden by the men who applied for relief being sent to work in the pits for the amount of money they would have to receive from the guardians.

The masters were communicated with on the subject, but at first refused to comply with the suggestion; they have, however, since re-considered the matter, and the clerks of the Merthyr, Bedwellty, and Crickhowell Unions have received a letter from the secretary of the Masters' Association stating that some of the collieries in those localities would be opened to the men at the same rate of wages as given in 1870. This step on the part of the masters will be a great relief to the ratepayers, who have had an excessive demand upon their purses during the strike and lock-out. Those men who apply for relief and refuse to work in the collieries will, of course, get their pay stopped. A meeting of the council of the Associated Masters was held at Newport, on Saturday; it was a strictly private one, but it is understood that business of importance was transacted, which will shortly be made known. The last furnace at Cyfartha finally succumbed to the blowing-out operation on Monday; this was the oldest furnace in the place, having been built in the year 1766. When it will be again blown-in it is difficult to say, but the masters are just now in a chronic state of indifference, and whether furnaces are lighted this year or not until next matters little odds to them, as they contend that at present rates they cannot compete successfully with the continental manufacturers. Orders come to hand but sparsely, and America, which was but recently our great market for iron rails, now scarcely sends any orders on to the English market. Advices from Russia, too, and the British colonies are anything but reassuring, and it will be of little use looking for many orders from any of those places. The outlook in the iron trade could not, therefore, be much gloomier.

The Coal Trade is in anything but a prosperous state; and, notwithstanding that comparatively so small a quantity of coal is still coming into the South Wales market, the supply appears to be quite equal to, if it does not exceed, the demand. This may, to a certain extent, be attributable to the fact that the non-associated masters at the commencement of the strike, thinking they would be masters of the situation, made every effort to increase their output; and, not being contented with fairly remunerative prices, at once raised them to famine quotations, the consequence being to drive buyers to other markets where they could get a cheaper class of coal. Whether the district will ever regain their custom or not it would be a hard matter to say; it may to a certain extent, but

undoubtedly a large portion has left it for good. Prices are gradually falling, and whenever the men return to their work it will be at a greater reduction than that which the first came out for. Looked at altogether, therefore, prospects in the trade of Monmouthshire and South Wales are anything but bright, and the locality will have to pass through a time of great tribulation before it again reaches its former prosperity.

The Tin Plate Trade still remains about the same, although the demand is by no means excessive, yet it is enough to keep things going at fairly remunerative prices. Great preparations are being made at Newport in anticipation of the opening of the Alexandra Docks, which event will take place on April 19. The day will be held as a general holiday; there will be a trades' procession, and illuminations in the evening. The retrenchment policy lately instituted by the Marquis of Bute is still being prosecuted with vigour, and his business affairs will in future be transacted upon strictly commercial principles. The new line of steamers lately running between South Wales and New York are at present, owing to the dullness of trade, laid up, and it is quite uncertain when they will again commence running.

REPORT FROM CORNWALL.

April 1.—It must be confessed that the announcement of the rise in the standard last week was received not exactly with incredulity, but with some little surprise. Very few people were hoping for any immediate good news, and even to those who were it almost seemed too good to be true. But it did not take long for us to become reconciled to it, and now we are calculating when the next move will be. The prospect is far more encouraging when the next considered, than could have been anticipated a few days ago.

One of the most eminent of our authorities on mining matters, or at least the legal side of them, has just passed away—Mr. William Shilson, of Tremough, near Penryn, known throughout the county as a solicitor and a banker, the proprietor of the Kennal Vale Gunpowder Works, and an adventurer in mining in almost every part of the county. Mr. Shilson was one of the leading members of the county committee by whom the question of the rating of mines was dealt with, nor upon that committee was there a single gentleman whose opinion was more valuable or valued. He was an excellent man of business in every respect, and connected with the committees of several important mines. Since he had retired from the more active duties of his profession Mr. Shilson had devoted a good deal of attention to the improvement of the estate, and matters of floriculture, in which—especially in rhododendron growing—his success was very great.

There is not quite so much doing in the granite quarries of the county as one would wish to see, but a fact has recently come under our notice with regard to the granite production of the county which is worth more than a passing note. There have just been forwarded from Par to Kent four huge granite monoliths, 3 ft. 6 in. square, and averaging nearly 30 ft. long. They are all hewn out of a single block at the Colcerrow Quarries of the Treffry estate, in the Ponomill Valley, near the famous Treffry Viaduct. They are to be set up in a group on the park of the gentleman to whom they are now belong, and who has four daughters whom they will commemorate for a thousand years and more if only the hand of time deals with them.

The settlement of the difficulty what had arisen with regard to Greener and Abraham must be regarded as very satisfactory. It would have been a thousand pities if so promising a mine, on which so many thousands have been laid out, had been knocked. At the same time, with the present bill of 13,000*l.*, increasing at the rate of 200*l.* a week, Messrs. Harvey were bound to look after their own interests. The arrangement made is fair and equitable—Messrs. Harvey have adequate security and fair interest, and the mine has twelve months' breathing and proving time.

In view of turning the old burrows at South Roskear to practical account and future profit, the adventurers in this mine have just erected furnaces to extract arsenic from the arsenical mudic, large quantities of which are on the spot from burrows left from the previous working. The result of a visit made to the mine shows that the furnaces are acting well, and the arsenic, a sample of which was taken from the flues during the visit of our correspondent, was of most excellent quality. These are the first furnaces that have been erected in any Cornish mine for the special purpose of burning or extracting arsenic from the stone.

TRADE OF THE TYNE AND WEAR.

March 31.—The Coal Trade continues very quiet in most branches, and the tendency is to still lower prices for all except coals and coke of the very highest class. Considerable stocks of steam and other coals are held at many works, and the

The great body of men in Northumberland have cheerfully accepted the reduction in the rates, which was settled by arbitration. One section of them, however, the mechanics, have determined to resist, and on Saturday next the quarterly meeting of the Mechanics' Association was held in Newcastle, and a deputation from the meeting was sent to the coal trade office, when they had an interview with the committee of the Coal Masters' Association. The deputation informed the owners that the men only partially employed by

owned the owners at the mechanics association. The deputation in-
 way clear to accept any reduction of wages. In reply it was stated
 by the masters that the award of the umpire must be upheld, and
 that they were determined to enforce it. The result of the inter-
 view was afterwards reported to the full meeting of delegates, and
 was unanimously resolved by them that the notices of all the
 mechanics be handed in immediately, so as to terminate on April 13.
 The men state that the award of Mr. Kettle takes away 15s of the
 5 per cent. advance received upon 1871 prices, leaving them with
 only a 21 per cent. advance upon 1871 prices, leaving them with
 an average of 3s. 6d. per week. Some improvement in the steam coal
 is expected, as the export trade will shortly open.

South Durham the only branch of the trade will shortly open. The present is coke, and there is still a good demand for full supplies at the furnaces of South Durham, for Yorkshire, and also for the West Coast. The obstinate and foolish strike at Monkwearmouth will continue, and the men are depending for support upon any aid they can get voluntarily from the men of the district, as they are not allowed any support from the Union funds. The owners of the collieries will be so paid as to prevent them suffering any loss, and they will be paid a fair price for their coal.

tinues, from the funds of the Durham Coal Masters' Association. The Iron Trade continues very quiet, and there is no change to be seen in the price of either pig or finished iron. The stocks of pig-iron are coming in very low, and it is quite clear that more will be required for rails, bars, and ship-plates. At Middlesbrough there was a fair attendance on Tuesday. The prices of pig-iron were the same as last week, being based upon 58s. 6d. and 59s. 3d. Cleveland pig.

NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.—A general meeting of members will be held on Saturday, when a discussion will be elected, and the following papers will be read for discussion:—"On the great coal fields of the North and the associated iron in the Northumberland," by Mr. G. A. Lebour. The following papers will be read:—"On the coal fields and mining industries of Russia," by B. Simpson. Some remarks on the beds of ironstone occurring in Lincolnshire will be read by Messrs. John Daglish and R. House.

TESTIMONIAL TO SIR GEORGE ELLIOT, BART., M.P.—The testimonial, presented to Sir George Elliot, Bart., M.P., is a magnificent dessert service, specially prepared by Messrs. Hunt and Nettle, of New Bond street, from the principal of which, on this occasion, the service consists of ten plateaux, and are intended to supply the centre of the table. The centre is decorated with six arms of a very rich floral pattern, and is surrounded by a dish for the reception of fruit or flowers, and is surrounded by a

[illegible]

to the Conservative cause, 1875." The total height of the centre is about 80 in. The four desert stands are similar in general style, each being supported by a figure emblematic of Arts, Legislation, Mining, and Manufactures. The plateau is a regular oval shape, with a richly chased border; on either side is a medallion supported by two reclining winged figures, the one medallion bearing the crest of Sir George Elliot within a garter containing the motto, the other medallion being engraved "Durham, 1875." The whole of the plateau is elaborately decorated with festoons of laurel and oak leaves, while wreaths of laurel at intervals enclose emblems corresponding with the figures on the central piece and desert stands. The plateaux which complete the service are two cornucopias or baskets for flowers, designed in the same style as the plateau, and ornamented with wreaths and festoons of laurel and oak leaves, the ends terminating in figures of Cupids. These are supplemented by two candelabra, each carrying five lights, similar to the others. The whole over 2000 guineas. While the total cost of this very handsome service is considerable, the admirable workmanship render it a worthy tribute to the esteem in which Sir George Elliot is held by all classes in the county of Durham.

REPORT FROM THE NORTH WALES DISTRICT.

March 31.—The Coal Trade is rather dull, and at some collieries the production is moved off with difficulty. The masters of the Ruabon, Wrexham, and Flintshire collieries have given notice of the reduction of 15 per cent. The men at the Westminster Colliery thought that throughout the district generally a compromise of 10 per cent. reduction will be effected. The ironworks and foundries are in full work, as are also the brick and pipe works. The annual meeting at the Wynnstay Arms Hotel, Ruabon, on the 22d inst., and a dividend of 10 per cent. on the year's transactions was declared. The whole of the directors were re-elected. They with the secretary and auditor were thanked for the way in which they had conducted the company's business.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

April 2.—Business in the Iron and Coal Trades of this district has been entirely suspended during the past week on account of the Easter holidays, and we have, therefore, little to add to our last report. It is now practically settled that there will be no alteration in the prices either of coal or iron in the South Staffordshire district on Quarter Day. The leading coalmasters, at a private meeting held in Birmingham, on Thursday afternoon, decided that coal should remain unaltered in price for the present, and wages, which it was still in force, continue at the standard which has ruled during the past quarter. By this resolution the maintenance of existing quotations for iron is practically decided, and some of the leading ironmasters have, indeed, intimated their intention to make no change. The effect of this decision upon the trade has not yet been ascertained, the holidays having, since the meeting was held, caused quite a suspension of transactions.

The wages committee of the South Staffordshire iron trade met at Wolverhampton, on Wednesday afternoon, at the offices of Mr. B. Smith, the official accountant to the trade. The employers were represented by Mr. J. P. Hunt (Chairman), Mr. George J. Barker, and Mr. J. Perks, and the ironworkers by Messrs. Ancutt, Capper, and Walker. The mean average of selling prices in the two districts (Cleveland and South Staffordshire) was shown to be 97, 11s. 5½d. per ton for bars. This brought down wages 2½ per cent., or to 9s. 6d. per ton for puddling, which is the minimum under the present arrangement. This scale will remain in force until July 30. A representative meeting of masters and men from both districts will, it is understood, be held in London on May 14, to decide upon a wages scale for the future.

To-day's quotations on the Birmingham Stock Exchange included the following:—Metropolitan Carriage and Wagon Company (Limited), $\frac{1}{2}$ prem.; ditto 6 per cent. preference, $\frac{3}{8}$ prem.; Patent Shaft & Axle (Limited), $\frac{1}{2}$ prem.; Sandwell Park Colliery (Limited), 34; Cannock and Huntington Colliery, $\frac{1}{2}$ dis.; Ivy House and Northwood Colliery, $\frac{1}{2}$ dis.; Chillington Iron, 6; John Bagnall and Sons (Limited), 6.

The number of blast-furnaces at present blowing in South Staffordshire is 78, but this total will be increased within the next few weeks to 85, arrangements for re-lighting this additional number being now in progress.

In the North Staffordshire Iron trade the Easter holidays have prospects of business are not by any means satisfactory for the season. The ruling quotations remain upon the basis of 8*l*. 17*s*. 6*d*. per ton for "crown" bars, and the demand is pretty much restricted to the smaller classes of iron. The ironstone and pig-iron makers are remarkably quiet. Messrs. R. Heath and Son have just turned out an immense casting, 100 tons in weight, for the block or bed of one of their steam-hammers.

At the Chillington Iron Company (Limited) meeting, held on Thursday afternoon at Wolverhampton, the report, which was given in our columns a fortnight ago, was unanimously adopted, and the retiring directors were re-elected. Mr. Fowler, solicitor to the company, stated that in its formation no "promotion money," in any shape or form, had been paid to anyone, so that, in this respect at the least, the Chillington Iron Company would compare favourably with some undertakings that had recently been launched.

THE COAL AND IRON TRADES OF NORTH STAFFORDSHIRE.—The quarterly meeting of the North Staffordshire Coal and Iron Masters' Association was held on Thursday, at Hanley, Mr. Wragge in the chair. Trade was reported to be in an exceedingly quiet condition, and very few transactions were going on pending the Birmingham quarterly meeting, to which purchases and prices were for the most part postponed. The Rating Act, 1874, which renders ironstone mines rateable to local rates under certain conditions, was fully considered, and led to considerable discussion.

REPORT FROM SCOTLAND.

March 31.—The Warrant Market continues very quiet, with little change in prices. On Wednesday and Thursday business was done from 72s. 3d. to 70s. 6d., closing for the week at 71s. 3d. This week there has only been a very moderate business done, from 72s. 3d. to 71s. 3d., closing this afternoon nominally 71s. 6d. The quotations for makers' iron are lower than they have been for some time, but the market seems steadier than it was last week.

G.m.b. at Glasgow (deliverable alongside).		No. 1.	No. 2.
Guthrie ditto	ditto	73s. 6d.-74s. 6d.	72s.-73s.
Coltness ditto	ditto	81 0	76 6
Summerlee ditto	ditto	84 0	75 0
Langloan ditto	ditto	82 0	73 0
Carnbroe ditto	ditto	82 0	74 0
Monkland ditto	ditto	73 0	73 0
Clyde ditto	ditto	74 0	72 6
Govan, at Broomielaw ditto	ditto	75 0	73 0
Calder, at Port Dundas ditto	ditto	74 0	72 6
Glenarnock, at Ardrossan ditto	ditto	82 6	74 0
Eglington ditto	ditto	80 0	72 6
Dalmellington ditto	ditto	71 6	69 6
Canongate, at Grangemouth, selected, ditto	ditto	71 6	69 6
Shotts, at Leith ditto	ditto	80 0	74 0
Kinnell, at Boness ditto	ditto	82 6	71 0
Bar iron		77 6	
Nail rods		89 0	

SHIPMENTS.		9 10	—
Week ending March 28, 1874			
Week ending March 27, 1875		Tons	10,601
Decrease			10,325
Total increase for 1875			274
for the week ending March 27, 1875			10,223
for the week ending March 27, 1875			—
for the week ending March 28, 1874		Tons	8,740

.....	3,740
.....	2,930
.....	810
.....	7,368

The Pig-Iron Market has been quiet since last report, without further reduction by makers; i. e., of backwardation was paid yesterday, but prices are likely to be further reduced as the demand is weak. At Dixon's works four of the smelting-furnaces have had to be stopped, owing to the break-down of one of the blowing-engines, but in the present state of the market this can have no perceptible effect upon prices. Malleable iron is meeting with a slightly

Improved demand for shipment, and although prices have been reduced privately to 9¢ and 9¢ 10s. (less 5 per cent.) business is not coming up to the expectations of makers. The little extra which is being given out is in too small quantities to put life into the transactions, and buyers are holding off in the expectation of better terms. This corporation have entered into contracts with two firms for the supply of water-pipes at fixed prices for the next six months. Coals for shipment show a good business.

Consequently the returns from the Scotch ports for the week reach a total of 44,892 tons, as compared with a total of 27,642 tons in the same week last year. This shows an increase of 17,250 tons, with considerable loadings still going on.

A Conference between the coalmasters' and miners' delegates of Fife and Clackmannan shires was held at Burntisland, on Saturday, when the masters agreed to limit the reduction of wages to 15, instead of 20, per cent., which would leave the wage at 4s. 3d. per day. These terms the delegates were not at liberty to accept, but subsequently, after consultation with their constituents, agreed to them, and the engine-keepers with their constituents, agreed to terms. The coalmasters of this district met here this afternoon for the purpose of arranging for the simultaneous announcement of a reduction of 1s. per day. The prices now got for coal were so low that they were compelled to resort to this means of rendering their output passably remunerative.

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The directors of the Tharsis Sulphur and Copper Company (Limited) have resolved to recommend to the shareholders at the annual meeting that a dividend at the rate of 25 per cent. per annum be declared from the profits of the company for the year ending Dec. 31, 1874.

The directors of the company of Merry and Cuninghame have convened a special meeting to consider a proposed agreement with the vendors, by which, in consideration of a considerable amount of work to be done, it is contemplated to be contained in the mineral field in the quantity of mineral to be made to the purchasers, who in their turn, the company, a concession of an arrangement for the payment of the debt of 250,000, due to the vendors, in instalments of between 30,000 and 39,000, during the next five years. The directors strongly recommend the shareholders to confirm the proposed agreement.

**THE SCOTCH MINING SHARE MARKET—WEEKLY
REPORT AND LIST OF PRICES.**

During the past week there has been little business done, owing to the Easter holidays intervening, on account of which the principal markets were closed from Thursday evening till Tuesday. In shares of iron and coal concerns, Marbella and Monkland ordinary have each improved a trifle, as also Bolckow, Vaughan, A's, which are now quoted ex div. Chillington, also quoted ex div., is unchanged, but firm on the satisfactory statements (noted elsewhere) made at the meeting. Benhar all-paid shares have been flat, and declined 1 $\frac{1}{2}$ market for new shares, simply owing to the depressed state of the market for coals. Omoa and Cleland is also offered at lower prices, and Merry and Cuninghame have declined; the circular by the directors of this company, mentioned in a former report as to be issued, has come out, and will be found after my report of Thursday's business; the numbers are also advertised of the original A debentures drawn for redemption. In shares of copper concerns, Tharsis are unchanged. Rio Tinto have changed hands at 8 $\frac{1}{2}$ and 8 $\frac{1}{2}$. Glasgow Caradon and West Maria and Portescue have improved, but Canadian Copper Pyrites and Huntington are lower. In lead mine shares quotations are:—Court Grange, $\frac{1}{2}$ to 1; Lady Constance, $\frac{1}{2}$ to 1 $\frac{1}{2}$; North Hendre, 2 $\frac{1}{2}$ to 3 $\frac{1}{2}$; and West Esclair Lie, 1 $\frac{1}{2}$ to 1 $\frac{3}{4}$. Silver shares Colorado Terrible are $\frac{3}{4}$ and Javal $\frac{1}{2}$ better, others undisturbed. Don Pedro North del Rey are lower, at 12s. to 16s.; Frontino to $\frac{1}{2}$; Rica, 2s. 6d. to 3s. 9d.; and The Gold, $\frac{1}{2}$ to 1. In oil and miscellaneous shares there has been very little done, and prices unchanged. A detailed list of the

On Thursday last (being contango-day) there was not so much closing 72s. to 74s. Canadian Copper Eyrites done at 37s. 6d., that price, sellers at 38s. 6d. Chillingito Iron, 5½ to 6; at the annual meeting, adopted, and the dividend of 5s. per share declared. The report given formerly was last year, which, with the continued stringency in America, financial matters, and the persistent competition by the Belgian manufacturers, in financial matters, much against the business of the company. The Belgian manufacturers, operated very to ship his iron for 3s. 6d. per ton from Belgium to London, whilst the stringency was also stated that not a single penny was paid for the promotion of the company; the vendors were offered, by a respectable and influential capitalist, the sum of £50,000, to guarantee that every share should be taken up, and they declined the offer. They took 58,000l. of the purchase-money, and they declined the value of the stock at present day. With reference to the minerals, every one of which works were swept away, and the stocks were to be sold under the company's hammer, the minerals then left would be worth more than all the present price.

price. The market has been somewhat more than all the shares at the
Ebbw Vale done at 19½, closing 19½ to 19½. Five Coal lower, at 4½ sellers,
Glasgow Collieries, 28s. at 26s. 6d., closing 26s. to 27s. Lechoor and Caplehead, 7½
37s. 6d., closing at these prices. Merry and Cuninghame lower, done from 37s. to
opened at 26½, advanced to 26½, but gradually declined to 26½. Tharsis
to 26½; new shares, 18 to 18½. Scottish Wagon, all-paid, 11½ to 12. The follow-
ing were the rates of continuation current to day:—Contangos: 1d., 1½d., even
on C. C. Pyrites; 1½d., 1d. on Emma; 6d. on Port Warrington; 1½d., even
Huntington; 3d., 2d. on Marbella; 1½d., 1d. on Merry and Cuninghame;
1d., 6d., 1½d., 6d., 3d. on Tharsis; 1½d., 1d., even on Merry and Cuninghame;
Young's Paraffin; 10d. on Rio Tinto; Backwardations: 1d., 1½d., 1d. on
and Cuninghame; 1d. on Monkland ordinary; 6s. 3d. on Shotts. There is no per-
ceptible change to note in these rates from those of last cantango day. The principal
price that has taken place during the account in prices, as shown by the making-
gold shares, is in Tharsis, which have risen 3½ on the all-paid, and 2½ on the 7½.

[illegible]

On Tuesday a good business was done. The account opened for sale on April 15; Monday, April 12, will be contango-day. Benhar, all-paid, 40¢; Bhan, A, 52¢; 32¢ ex. div. Canadian Copper Pyrite, opened at 34¢. Bolcock, opened at 34¢, closing firm at 11¼ to 11½; new shares done at 37½, but to 5½ ex. div. Colorado Ferrielle firm at 3¼ to 3½. Ellbow Yalo, 18½ to 19¼. Agent's report, dated March 26, to 26s. 6d. Glasgow Caradan remain at 26s. 6d. for next month's sale." Hunsington low, done at an increased quantity 6d. Javali, 15s. to 17s. Lochore and Capeladra, 1¼ to 1. Merry and Cunningham, opened at 41s, but quickly declined to 38s., then to 37s., closing 37s. Rio Tinto done at 8½, closing 8½ to 8½. Tharsis opened at 26½, but needed to 26½, closing firm at 26½ to 26 8-16th. New shares easier, done at 19,

closing 18 to 18½. West Maria and Fortescue done at 4s. to 5s. Scottish Wagon, all paid, 11 15-16ths; new, 12 paid shares, done at 31s.

On Wednesday a good business was done. Benhar, all paid, done at 11½ and 11¾, closing 11 to 11½; new (3½ paid) shares done at 71s. and 70s., closing 3¼ to 3½. Canadian Copper Pyrites opened at 32s., but declined to 30s. 6d., again rallied to 33s., and close 33s. to 31s. Ebbw Vale, 19¼ to 20. Glasgow Caradon done at 26s. 6d. and 27s., closing 27s. to 27½. Lochore and Caplethrae, 7½ to 8. Marbella better, at 4¼ to 4½. Merry and Cunningham opened at 35s. and 35s. 6d., but declined to 33s. 6d., closing flat at 33s. to 33s. 6d.; notice is published to-day to holders of original debentures of this company that bonds, amounting in all to 11,600l., have been drawn by lot, for payment at the office of the company on any day between the 1st and 30th proximo, as provided in the Articles of Association; interest ceases to run on the bonds so drawn from April 1. Monkland ordinary done at 61s. 6d., closing 61s. to 62s.; guaranteed preference done at 7½. Rio Tinto done at 8½. Tharsis firm, done at 26½ to 26½, closing at these prices; new shares, 18 to 18½. Scottish Wagon, all paid, remain at 11 15-16ths to 12. Subjoined will be found the latest prices:—

Amount	Amount	Name	Latest
share.	paid-up.		price.
10	6	Arncliffe Coal (Limited)	7½
10	10	Benhar Coal (Limited)	11½
10	10	Ditto	3½
100	30	Bolckow and Vaughan Coal (Limited)	A. 25½
10	7	Calncliffe Gas Coal (Limited)	5½
10	10	Chillingham Iron (Limited)	5½
32	29	Ebbw Vale Steel, Iron, and Coal (Limited)	19½
10	4	Fife Coal (Limited)	4½
10	8	Glasgow Port Washington Iron and Coal (Limited)	3½
10	10	Ditto All paid	4½
10	10	Lochore and Caplethrae (Limited)	8
10	10	Marbella Iron One (Limited)	4½
10	3½	Merry and Cunningham (Limited)	33s. 6d.
10	10	Ditto All paid	9½
10	10	Monkland Iron and Coal (Limited)	61s. 6d.
10	10	Ditto 7 per cent. Guaranteed Preference	7½
100	100	Nant-y-Glo and Blaenau Ironworks pref. (Limited)	44½
10	4	Omoa and Cleland Iron and Coal (Limited)	2½
1	1	Scottish Australian Mining (Limited)	1½
1	5s.	Ditto New	6s. 3d.
10	4	Shotts Iron	75
10	4	Ditto New issued at 2½ premium	6
COPPER, LEAD, SULPHUR, TIN.			
10	7	Canadian Copper Pyrites (Limited)	33s.
10	10	Ditto All paid	6½
10	7	Cape Copper (Limited)	32
10	5	Drake Walls	6
2	2	Dunstable Wheel Phoenix Tin (Limited)	4s.
1	1	Glasgow Caradon Copper Mining (Limited)	27s.
1	1s.	Ditto New	16s.
10	5½	Gunnislake (Glitters)	13½
10	9	Funtington Copper and Sulphur (Limited)	41s.
1	1	Islay Lead (Limited)	12½
25s.	25s.	Kapunda Mining (Limited)	1½
4	4	Panulic Copper Mining (Limited)	1½
10	10	Rio Tinto (Limited)	8½
10	10	Russian Copper Mining (Limited)	2½
10	6	South Roskell	4½
10	10	Tharsis Copper and Sulphur (Limited)	26½
10	7	Ditto New	18½
10	8s. 6d.	West Maria and Fortescue	4s. 6d.
1	1	York Peninsula Mining (Limited)	2s. 9d.
1	1	Ditto 15 per cent. Guaranteed Preference	¾
GOLD, SILVER.			
5	5	Colorado Terrible Mining (Limited)	3½
20	20	Emma Silver Mining (Limited)	15½
10	10	Flagstaff Silver Mining (Limited)	3
2	2	Javali Gold Mine (Limited)	16s. 3d.
5	5	Last Chance Silver Mining (Limited)	1
OIL.			
10	7	Dalmien Oil (Limited)	111s. 6d.
5	5	Midlothian Mineral Oil (Limited)	¾
10	10	Uphall Oil (Limited)	1½
10	10	West Calder Oil (Limited)	1½
10	8½	Young's Paraffin Light and Mineral Oil (Limited)	6
MISCELLANEOUS.			
10	10	Conglog Slate and Slab (Limited)	10½
10	9	Highland Peat Fuel (Limited)	7
50	25	London & Glasgow Engineering & Iron Shipbuilding	23½
1	1	North Cornwall Kaolin (Limited)	1
20	9½	Peruvian Nitrate (Limited)	1
10	10	Scottish Wagon Company (Limited)	12
10	1	Ditto	31s.

NOTE.—The above list of mines and auxiliary associations is as full as can be ascertained. Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in this list, they will be good enough to communicate the name of the company with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.
Post Office Buildings, Stirling, April 1.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

April 1.—There has been very little work done during the week so far, the men having taken full advantage of the holidays, and at a good many places work was not resumed before Wednesday. The coal has been cleared away from the collieries, and there appears to be no scarcity of wagons, so that there will be plenty to do for the miners. The business doing with London over the Midland has been very good, and a considerable tonnage has also been sent to Birmingham and the West of England. The reduction, which may now be said to have commenced, is likely to be fully agreed to by the colliers, but many of the topmen are not disposed to accept the terms. Of course, a strike on their part would lead to a stoppage of all work at the bottom, and the throwing idle of the pits. The purchase of the Shirland Colliery, near Alfreton, by the South Yorkshire Miners' Association, is said to be all but completed. It is bought from Mr. Baillie, the mortgagee, for the sum of 75,000l., of which 15,000l. has been paid as a deposit. It is proposed to raise 100,000l., in 5s. shares, and, whilst the Association will increase its interest in the concern to 30,000l., a bank proposes to lend 40,000l. by mortgage, and it is expected that the miners and their friends will take up the other 30,000l. Mr. A. Mundella has consented to act as chairman, whilst Mr. Macdonald, M.P., is also to be one of the directors. The other members of the board will be the president, treasurer, and secretaries of the Association.

The Sheffield trades have undergone very little change of late. The Bessemer Works, however, have improved, and some very fair orders have been given out for rails. The heavy armour-plate, as well as the ship and boiler-plate, mills are well off for work. Crowley and Co., of the Kelham Works, whose malleable castings are so widely known, have been doing very well, and their latest specialities, Edwards's patent chaff-cutter, and the "Invincible" lawn-mower, which carried all before them at the leading exhibitions last year, promise to be in greater demand than ever. There has been no alteration with respect to the cutlery branches, or with respect to crucible steel. Coal is now easier to purchase than it has been at any time since the commencement of the year, and is likely to be still lower. Consequently, merchants and manufacturers are only buying sparingly. This does not look very well for some of the companies formed two or three years ago for the purchase of collieries at very high prices. Some of them have not as yet paid any dividend, and the prospect of their doing so is more remote than ever.

Early on Wednesday morning an explosion, likely to be attended with serious consequences, took place at Rockingham Colliery, about four miles from Barnsley. The colliery is in course of sinking to the well known Silkstone seam, by Messrs. Newton, Chambers, and Co., owners of Shorcliffe and Caplethrae Collieries and Ironworks. The sinkings having reached the Parkgate seam, coal was being worked to supply the engines. At the hour named the firing of a shot liberated a quantity of gas, which exploded and set the solid coal on fire. The workmen escaped uninjured. During the day mining engineers from several leading South Yorkshire collieries arrived on the spot and held a consultation. There being no water at hand, it was determined to seal both shafts, which was done on Wednesday night. The sinkings, which have been remarkably free from water, were looked forward to with great interest, being one of the first collieries in South Yorkshire which was likely to reach the Silkstone seam from the Barnsley bed, a distance of about 380 yards. The fact of the coal having caught fire is likely to lead to the sinking operations being discontinued for a long time.

HOW MINERS RISE—FROM TRAPPER TO MANAGER.—It was formerly said of the army of the first Napoleon that every soldier carried in his knapsack a marshal's baton, and many of his best generals were at one time mere privates. So it may be said of a miner that he may by his ability and self-denial not only become the manager of a colliery, but an owner as well. Of this we have many instances at the present day. Sir George Elliot, M.P., one of the wealthiest magnates of the day, began life at a very early age as a pit boy, and gradually worked himself up to be one of the first mining engineers we have in the kingdom, as well as one of the richest coalowners. In South Yorkshire, at the present time, the management of some of the largest collieries is in the hands of men who commenced their career as trappers, without any education other than what was obtained at a Sunday school. Amongst others, we name Mr. James Wilson, the present manager of the Oaks Colliery, near Barnsley, and who was one of the engineers recently presented by the Messrs. Charlesworth with a massive silver cup, in recognition of services rendered in connection with the explosion which recently took place at the Rawmarsh Colliery. Mr. Wilson, we are informed, commenced

working at nine or ten years of age as a door keeper, and passed through all the various grades until he became a deputy at the Lambton, Hetton, and South Hetton Collieries. In September, 1846, Mr. Wilson took charge of the ventilation at the Trindon Grange Colliery, where he also occupied the post of overseer, and, removing from thence, he filled a like position at South Wingate Colliery. In November, 1855, he was appointed interviewer of Castle Eden Colliery, on leaving which he was presented with a gold watch-guard and a silver pencil-case, and was then promoted to the post of resident viewer at the Monkwearmouth Colliery. In July, 1858, Mr. Wilson became resident viewer at Thornley Colliery, and on his leaving, in July, 1859, was presented by his friends with a beautiful timepiece, of massive workmanship. He now removed to Yorkshire, where he took charge of Snidle Colliery, near Pontefract, and afterwards of the Darfield Main Colliery, at which latter he was presented by numerous friends with a valuable gold watch and guard. In November, 1871, Mr. Wilson was appointed manager of the Oaks Colliery, which position he still holds. With others, he received from Mr. Thomas Dymond, the managing owner, a valuable present, for services rendered at the disastrous Oaks explosion, in 1865, when, it will be remembered, no less than 364 lives were lost. Another of the recipients of Messrs. Charlesworth's gifts, Mr. J. F. Thompson, served his apprenticeship at the Thornley Collieries, principally under Mr. Wilson, and, after rising in his profession, was appointed to a responsible position, and was for some time at the Seaham and Seaton Collieries, in the county of Durham, belonging to the Marquis of Londonderry. He now fills the post of manager at the Marquis's Main Colliery, Wath, as well as being connected with other large and important undertakings. Mr. Ward, also of the Marquis's Main Colliery, another recipient, was also for some time under the tuition of Mr. Wilson, at the Old Oaks Colliery. We may say that the present race of miners and their families have advantages which were not enjoyed by those who were set to work some 40 or 50 years ago. There are now educational establishments where all that relates to scientific mining is taught. Competent managers, too, are scarce, so that a determination to learn, diligence, patience, and self-denial are the elements by which the working miner, or even the trapper, may rise to a position of honour and trust, instead of wasting his time and exhausting his strength at the coal face. They have noble examples before them, let their motto be "Excelsior."

FRANCOFORDIENSE EMPORIUM—AN INTERNATIONAL EXHIBITION THREE HUNDRED YEARS AGO.

Among a series of exceedingly interesting reprints and translations* recently issued by Mr. ISIDORE LIXEUX, of Paris, is one which is fairly worthy of being brought to the notice of the readers of the *Mining Journal* since it contains an account of the international and permanent exhibition which were held at Frankfurt at the time the book was originally printed. The address "to the most honourable and worthy consuls and senators of the illustrious town of Frankfurt," which serves as an introduction to the account itself, shows that the early printer was by no means deficient in that classical and general knowledge which at that time was beyond the reach of any but the favoured few, and he certainly displays an acquaintance with the usual object of authors when he remarks that, although they had written upon an infinity of things, it had been much less with a view to the public or private good than to parade their own ability. "At mihi," says he, "Francofordiensem nundinarum encomium hac oratione complere aggredieris, non tam sperandum esse eloquentiam laudem, quam, ne infantiam meam prodam, metuentium esse non timor," and he continues that the subject, far from being a light and unimportant one, is one which offers a very large field for praise.

In the first place, he remarks that in all Germany they could not wish for a more suitable site than Frankfurt, and that whoever may be its founder (for according to several historians, Francis, the son of King Marcomir, did not build, but merely restored the town, although from him comes the name of Francofonia, in German, Frankfurt as a substitute for the original name of Heleopolis) he seemed to have foreseen the important position it was to occupy. After commenting upon the great variety and excellence of the articles exhibited, he remarks that jealousy among the merchants is unknown, and that as to the transactions which the dealers make between themselves, they may be characterised in a word: "siquis bone fidei reliquias Astræ in terris reliquit non minimam eorum partem iis suppetere." All the dealers there observe a rule which (he is ashamed to say it, but it must be said, nevertheless) is but little followed in France or elsewhere; they mark their goods at a price but little higher than that which they intend to take, and are content with small profits. But what will you say to this, he continues, and is it not another marvel to the credit of the trade? "quod et Judæos fides an suadet, inquam qui institutum ibi propter suum ingenium deponere quod dammodo, et in their dealings with them, influenced, he supposes, by the genius of the fair, give proof of something better than Judæic faith. Without any doubt they are for the trade "si non ornamento, certe adjumento, præsertim quod apud pecunie permutationem attingit," and in that again the wisdom of the Senate of Frankfurt ought to be praised, or having seen with no less perplexity than Plutarch how to turn even one's enemies to advantage.

Further on the narrator refers to the Universities who send their representatives there, and points out the facilities offered at Frankfurt for the study of the fine arts and literature, but enough has been given to show the general character of the book. Mr. Lixieux's translation is excellent, and from the peculiar manner in which the subject is treated, and the quaintness of the Latin in which it is written, the perusal of the volume will afford an hour's healthy amusement, and at the same time supply a vast fund of interesting information.

* "Rapport sur la Bibliographie présentée à la Convention Nationale, le 22 germinal an II (1794)," par Grégoire, évêque constitutionnel de Blois, Député à la Convention. 2. "Scènes de la vie," par M. Leclerc, réimprimé sur l'édition unique de 1770. 3. "La Conférence entre Louis et le Diable au sujet de la Messe," &c. 4. "La Foire de Frankfurt" (Exposition universelle et permanente au seizième siècle), par Henri Estienne. Traduit en Français pour la première fois sur l'édition originale de 1574, par Isidore Lixieux. Paris: The Translator.

FUEL.—Mr. J. GRIFFITHS, of Birchgrove Colliery, near Neath has patented improvements in machinery for moulding and pressing artificial fuel and bricks, and in preparing materials used in the manufacture of fuel. This invention relates firstly to improvements in regulating the pressure imparted to material in the form of a powder, or in the case of a solid material, the plastic material used in the manufacture of artificial fuel. By the invention of Mr. ROBERT PUNNION, of Heatherley, in fuel applicable to lighting and heating purposes, petroleum is passed through perforated chalk, to which heat is applied. A condenser is employed between the reservoir of petroleum and the chalk, to keep the petroleum in a liquid state as required. For heating purposes blocks of perforated chalk are used, and for lamps burners made of chalk. A flashing light for signals is produced by turning the supply of petroleum on and off by means of a feed-cock.

FURNACES.—Mr. J. KIDD, of Martin's-lane, City, has patented a new method of decomposing and generating gas, suitable for lighting or heating purposes, by means of an arrangement of furnace and attachments, which furnace is combined with a closed decomposing chamber, containing incandescent fuel. Heated gas vapour, or the products of combustion, are forced through this incandescent fuel by the escaping force of a jet of steam or hydro-carbon vapour, and is changed into a permanent gas. When this gas is required to be burned in the furnace where it is generated he allows atmospheric air to mix with the vapour from the forcing jet, but when the gas is not to be burned where generated he allows no atmospheric air to mix with the forcing jet of vapour.

HYDRAULIC POWER.—Capt. F. D. WALKER has patented an improved method of generating and utilising hydraulic power, and for its application to all purposes where steam or other power is now used. The invention consists in the employment of a simple hydraulic press, the ram of which is actuated by two vibrating levers arranged one above the other and pivoted respectively to the ram and to the upper table or cross head of the press; the meeting ends of these levers are connected and vibrate together by a ball and socket or other suitable jointed piece, to which is connected a rod leading to and connected with a compound lever actuated by electro magnets or other suitable power in such a manner that a reciprocating movement is given to the said rod, whereby the two vibrating levers are moved so as to depress or communicate a considerable compressive force to the ram press. The hydraulic pressure so generated in the press is caused to pass into the working cylinder and operate a piston in connection with the driving shaft of an engine or other machinery.

LIGHTING AND HEATING.—According to the invention of Mr. A. M. SILBER, managing director of the Silber Light Company, Whitecross-street, the oil or combustible liquid holder is connected by an arm with a burner. The oil holder is connected with a chamber, which is provided with a non-conductor jacket. At the bottom of such chamber is a second chamber, inside which is a third or inner chamber, on which the burner rests and through which air is supplied thereto, having entered through openings in the first named chamber and thence through the second chamber. The heated products of combustion are conducted through the bottom of the outer chamber and by a channel, and escape through a door or cap.

WELDING IRON AND STEEL.—Mr. H. SCHIERLOH, of New Jersey, has patented the preparation of a flux for welding iron or steel to iron, or to steel, or to cast iron at a lower heat than usual, the flux consisting of wrought-iron turnings or chips, ground to the condition of coarse filings, mixed with refined borax, from which part of the water of crystallisation has been evaporated, and the whole reduced to a meal. Other chemicals used for welding may be employed instead of or along with borax.

EXCAVATING MACHINE.—By the invention of Mr. W. F. LAWRENCE of Gloucester-rove, Clifton, a frame is suspended from a jib head of a crane, a spade cutter is free to slide on this frame; it is raised by the crane, and allowed to drop to cut into the land, then turned to raise the earth cut away by it, and caused to deposit the earth into a wagon.

ELEVATING COAL.—The invention of Mr. J. L. BATES, of New York City, has for its object the raising or elevating of coal or other heavy material from the ground, or out of boats into trucks or carts or on a conveyor, so that the material may be moved any desired distance from the place of hoisting; and it consists, first, in making the elevating channel in two parts, one sliding within the other telescopically; secondly, in so pivoting the buckets or shovels to two endless chains that, as they come out at the lower end of the channel, they are pushed under the material before they begin to rise; thirdly, in having the elevating chains and other parts carried by a hollow vertical column supported in such a manner that the whole of the elevating mechanism may move in about the third of a circle.

ROTARY ENGINES.—The invention of Mr. WILLIAM SMITH, jun., of Osaka, Japan, relates to improvements in rotary engines, and consists of a hollow cylinder closed at both ends, through the centres of axes of which passes the driving shaft, the latter being enlarged where it passes through the interior of the cylinder, so as to form an annular space therein. The piston of the engine is a double, rotative wheel, the driving shaft inside the cylinder, and is alternately depressed and projected at the ends by means of inclined or cam surfaces at the ends of a curved or segmental block, which fills up or entirely closes a portion

of the said annular space in such a manner that the piston is brought under the influence of the pressure from the steam or air entering the cylinder through the inlet or supply pipe, and under that of the exhaust or vacuum through the exhaust pipe, whereby a continuous rotary motion is given to the shaft or engine.

CONSUMPTION OF SMOKE.—Messrs. T. WRIGLEY, G. BRADLEY, and J. MATTERS, have invented some improvements in the consumption of smoke, and in the apparatus employed therefore, the novelty of which consists in the closing the entrance for air to the asphalt whilst firing up, and until a bright fire has been obtained, during which the furnace is supplied with air through the above bars. Secondly, the novelty consists in a peculiar arrangement of the air whilst firing up and until a bright fire has been obtained into the furnace through the bars and under the bridge into the flue; but when the fire has been simultaneously reversed the dampers of the bridge, so that the draught will be drawn from the asphalt through the bars and over the bridge in the ordinary manner.

MANUFACTURE OF IRON.—Mr. W. EVANS, of Staffordshire, has patented an invention according to which a puddling-chamber, a refining-chamber, and a melting-chamber are arranged in juxtaposition, or side by side, the said chambers being at different levels, the puddling-chamber being the lowest. The puddling-chamber is situated near the top of the furnace; next the said puddling-chamber is the refining-chamber; and between the said refining-chamber and the exit flue of the furnace is the melting-chamber. The pig-iron to be made into wrought-iron is placed on the incline of the melting-chamber, where it is melted by the waste heat passing through the chamber, and runs into the refining-chamber, where it is refined by the action of blast of air upon it. The refined iron passes by a passage to the puddling-chamber, where it is puddled in the usual way.

EMMA MINING COMPANY.—Mr. Alexander MacDougall writes:—"I appeared to oppose the petition to wind-up this company on behalf of shareholders holding upwards of 23,000 shares, of whom I think I may say at least one-half were original holders. On the other hand the supporters of the petition were Mr. Askew, who was an original shareholder of 125 shares; seven other shareholders whose names did not transpire, but whom I think I may take for granted were not original shareholders; and by no one else excepting three of the original directors—Mr. Pemberton, M.P., Mr. Anderson, M.P., and Mr. Brydges Williams, M.P.—whom it transpired had had their shares paid for them; and by Mr. Hammond, M.P., Mr. Hutton, and Mr. Commissary-General Gardner, who, assuming to be the present directors, appeared in support of the petition, although they had applied for, and with my concurrence received, the instructions of 700 shareholders, representing over 400,000l. of the capital of the company, to oppose this petition up to the Court of Appeal, and whose conduct in wheeling round when they got into Court is very naturally described as a little curious."—The Philadelphia Correspondent of the *Times* (March 19) says—"The English shareholders in the Emma Silver Mining Company some time ago brought suit for damages in the New York Courts against Senator Stewart, General Baxter, and other American promoters of the enterprise. The damages claimed are \$5,000,000. In this suit, the defendants having been served with the complaint, they determined that the plaintiffs should be asked to give security for costs, and accordingly a motion to that effect was made on March 17, before Judge Donahue, in Supreme Court Chambers. The Judge, after hearing the various affidavits on which the motion was based and the arguments of the counsel, granted the motion, and ordered the plaintiffs to give security for costs in \$5000."

VALUABLE DISCOVERY OF COAL IN THE BRAZILS.—A very superior bed of coal has been discovered in the province of Rio Grande do Sul by the manager of the Sao Jeronymo Coal Mines, the property of the Imperial Brazilian Collieries Company. The coal is alleged to be quite equal to best English quality. Orders have been taken for the verification of this report, and it is clear that the finding of such first-class coal would be of immense profit to Brazil. *Brazil and River Plate Mail*, March 23.

GOLDENHILL COBALT, NICKEL, COLOUR, BORAX, AND NEAR STOKE-UPON-TRENT, STAFFORDSHIRE. JOHN HENSHALL WILLIAMSON, MANUFACTURER AND REFINER. Purchaser of Borate of Lime and Tinical.

NICKEL AND COBALT REFINING, AND GERMAN SILVER WORKS, 16, COZELL STREET NORTH, BIRMINGHAM. STEPHEN BARKER begs to inform the Trade that he has the following articles for sale:—REFINED METALLIC NICKEL. REFINED METALLIC BISMUTH. OXIDE OF COBALT. GERMAN SILVER—IN INGOTS, SHEET, WIRE, &c. NICKEL AND COBALT ORES PURCHASED.

Will be ready early in April, Parts I. and II., royal 4to., 5s. each. MINING ENGINEERING, Being a PRACTICAL TREATISE ON COAL MINING. By GEORGE G. ANDRE, F.G.S., Mining and Civil Engineer. To be completed in 12 monthly parts, of 48 pages, illustrated by six plates of practical drawings. London: E. and F. N. SPON, 48, Charing Cross. New York: 44½, Broome-street.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
March 27	Van Consoles	20	£13 12 6	—
29	Lisburne: Glogfah 14	19	0 0	Walker, Parker, and Co.
—	East Darren	40	18 0	Panther Lead Co.
—	Cwmtythwl	40	15 0	ditto
30	Plylimmon	15	1 0	Sheldon, Bush, and Co.
31	Brondfloy	25	15 16 6	Panther Lead Co.
April 1	West Tankerville	20	14 3 0	Nevill, Druce, and Co.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
March 29	Talargoch	150	£ 3 15 6	Richardson and Co.
April 1	West Tankerville	20	£ 3 17 6	Villiers Spelter Co.

Date.	Mines.	Tons.	c. q. lb.	Price per ton.	Amount.	Purchasers.
March 31	Penhalls	9	2 1 26	—	£ 494 7 3	Danbus.

COPPER ORES.

Sampled March 17, and sold at Tabb's Hotel, Redruth, April 1.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Crenver and Abraham	74	£5 19 0	Wheal Bassett	35	£5 3 0
ditto	73	2 14 0	ditto	34	3 3 0
ditto	72	3 18 6	ditto	33	11 4 0
ditto	64	2 14 0	East Pool	52	2 15 0
ditto	63	2 19 0	ditto	33	3 2 6
ditto	59	2 17 0	Carn Brea	21	4 19 0
ditto	49	2 6 0	ditto	42	4 16 6
ditto	45	3 1 6	St. Aubyn United	10	9 11 6
ditto	44	4 13 6	South Dolcoath	40	3 8 6
ditto	33	2 16 6	South Carn Brea	38	4 17 6
West Tolgus	68	5 19 0	Levant	22	12 0 6
ditto	65	9 4 0	New Rosewarne	12	2 19 6
ditto	68	7 14 6	ditto	11	11 9 6
ditto	57	6 0 0	West Dulcie	10	6 15 6
ditto	56	5 4 0	ditto	6	5 15 6
ditto	53	6 12 0	South Frances	15	3 15 0
South Crofty	69	3 5 0	Phillips's Ore	7	3 11 6
ditto	61	3 11 0	Poldice	8	2 17 0
New Pembroke	105	9 12 0	South Tolcarne	8	2 13 0

TOTAL PRODUCE.

Crenver & Abra.	600	£2398 14 0	South Carn Brea.	33	£ 150 17 6
West Tolgus	357	2335 1 0	Levant	22	294 11 0
South Crofty	130	440 16 0	New Rosewarne	22	109 9 0
New Pembroke	105	1008 0 0	West Poldice	17	167 17 6
Wheal Bassett	92	544 19 0	South Frances	15	58 0 0
East Pool	67	253 7 6	Phillips's Ore	7	28 0 0
Carn Brea	66	319 19 6	Poldice	8	14 5 0</

THE ABERCRAVE DINAS FIRE-BRICK.

THE SWANSEA DINAS FIRE-BRICK, CEMENT, AND TILE COMPANY (LIMITED) are prepared to supply the above well-known DINAS FIRE-BRICK, for home consumption or shipment.

OFFICES.—1, PROSPECT PLACE, SWANSEA.

THE ROCK-BORING CONTRACT COMPANY.

DARLINGTON'S PATENT ROCK-BORING MACHINERY.

OFFICES.—2, COLEMAN STREET BUILDINGS, MOORGATE STREET, LONDON.

FOR TUNNELLING, DRIVING LEVELS, CROSS-CUTS, AND SINKING SHAFTS.

THE PATENT COTTON GUNPOWDER COMPANY (LIMITED).

Are now PREPARED TO SUPPLY their BLASTING POWDER, No. II, in bulk and in cartridges of all sizes. This Powder is superior to any Mining Explosive available to the public or known to science.

ITS MANIPULATION IS EASY.

ITS ECONOMY GREAT.

ITS SAFETY ABSOLUTE.

It can be sent by all railways and the principal canals at gunpowder rates. Printed details and prices will be transmitted on application, and a representative of the company will attend on requisition from Mine Superintendents or Quarry Owners desirous of judging of the value of this new explosive. Application to be made to the Superintendent at the Works at Oare, near Faversham, Kent.

WHEAL GRESSON SILVER-LEAD MINE,

LAUNCESTON AND TAYSTOCK, DEVON.

A FEW CAPITALISTS are invited to JOIN TOGETHER to WORK this MINE as a LIMITED LIABILITY COMPANY. The lodes contain a large amount of ore at and above the 20 fm. level, which is the deepest level. Two thousand pounds judiciously spent is considered enough to make this a rich mine. One of the lodes is now open at surface, and producing rich stones of ore, which may be seen by parties desirous of inspecting the property. For further particulars apply to—

Mr. W. D. KING, Solicitor, Camelford.

THE BURNWITAN FIRE-BRICK AND CLAY WORKS COMPANY (LIMITED).

Incorporated under the Companies Acts, 1862 and 1867. Capital £10,000, in 50 0 Shares of £2 each.

Deposit, 10s. per share on application; and 10s. per share on allotment. No further call to be made for 12 months. Directors to be chosen by the Shareholders at the first meeting, the qualification being 100 Shares.

NO PROMOTION MONEY WHATSOEVER.

MANAGERS. MESSRS. TWEEDY, WILLIAMS, and CO., Redruth, Cornwall. MESSRS. GLYN, MILLS, and CO., London.

The object of this company is to develop a very extensive bed of fire-clay, in the parish of Gwennap, county of Cornwall, and to erect works for the manufacture of fire-bricks and other articles. The property embraces an area of over 8 acres of the finest fire-clay deposit that has been discovered in the county for many years. A pit has been sunk into it through clay for 40 fms. deep, thus proving the quantity to be almost inexhaustible. It will be seen from the report and analysis, made by Prof. Rowe, and also report from a brick manufacturer, that the quality is such that will ensure a demand for any quantity, thus divesting the enterprise entirely from speculation.

The Devonian Railway is within a distance of about 200 yards of the pit, the cost of transit to shipping port being 1s. 9d. per ton. The proprietor sells his interest in the lease (which is for 21 years, from the 15th September, 1874, with a further right of renewal for another term of 21 years, at a royalty of 3d. per ton) for the sum of £2000, in fully paid-up shares, and £500 cash, binding himself not to sell any portion of his interest until a dividend of 30 per cent. on the paid-up capital shall have been declared.

After paying the cost of raising and making marketable the produce of the pit, it has been cautiously estimated that at least 30 per cent. per annum profit will be divided among the shareholders after the necessary kilns are erected for the reception of brick, which will be accomplished in about six months.

The remainder of the capital (£2500) will not be called up unless the shareholders think fit of extending the scale of operations without trenching on the dividends.

The SHARE LIST will be CLOSED at the END of a FORT-NIGHT, but the first applicants will have the preference of allotment, immediately after which a meeting of shareholders will be convened for the purpose of electing directors.

Applications for shares, accompanied by cheque or Post Office Order for 10s. per share (the amount of deposit), must be made to the bankers of the company, or the Manager, who will return the usual bankers' receipt for the amount.

West Cornwall Chemical Laboratory, Redruth, Sept. 24, 1874.

DEAR SIR,—I beg to inform you that I have examined the sample of fire-clay forwarded to me on the 12th instant, with the following results:—The sample represents an excellent specimen of fire-brick clay, being a pyramite or decomposed felspathic granite, free from iron stains, thoroughly disintegrated, and is indeed a valuable material, when properly treated, for the production of fire-bricks and freck, of a highly refractory character. I have made a chemical analysis of the clay, and find its composition to be as follows:—

Copy of a Report from Mr. JAS. HOWELL, Swansea.

Fire-Brick and Terra-Cotta Works, Mile End Pottery, London, near Swansea, Sept. 10, 1874. Sir,—I have used about 100 tons of your fire-clay, and it works and makes a fire-brick equal to any I have ever made; it stands the most severe tests in the upper furnaces and also at the steel works.

I am, Dear Sir, yours truly, JAS. HOWELL.

THE CHAPPAPOTA ASPHALTUM COMPANY (CLARK'S PATENT).

GENERAL OFFICE. 10, CRAVEN BUILDINGS, DRURY LANE, LONDON, W.C. GEORGE CLARK, MANAGER.

CITY OFFICE.—139, CANNON STREET, E.C. W. H. BECK, ENGINEER AND SURVEYOR.

This company undertakes the execution of Asphaltum Paving, Flooring, Roofing, Foundation Courses, and all other kinds of asphalt work with their PATENT ASPHALTUM MASTIC, warranted not to crack from cold or vibration, or to soften at any atmospheric temperature. The asphaltum material of this company is equal to the best rock asphalt, and considerably cheaper. It is entirely free from the defects of British and other imitation asphalt, of which pitch, and not asphalt, is the basis. The company guarantees sound work, with perfect joints, at moderate prices. Price-lists and full particulars may be obtained at the above offices.

STAR LIFE ASSURANCE SOCIETY,

48, MOORGATE STREET, LONDON, E.C.

Invested Funds £1,216,115

Annual Income 223,613

Bonuses Apportioned 581,774

Claims paid 1,140,151

COPIES of the REPORT, BALANCE SHEET, and PROSPECTUS, with all information, forwarded on application to—

W. W. BAYNES, Secretary.

CO-OPERATIVE CREDIT BANK,

MANSON HOUSE CHAMBERS, 12, QUEEN VICTORIA STREET, E.C.

First issue of capital: £500,000, in subscriptions of £10 and upwards. Interest in lieu of dividend 18 per cent. per annum, paid monthly. Current accounts opened, and 5 per cent. interest allowed on the minimum monthly balances.

CHEQUE BOOKS SUPPLIED.

The Bank transacts every description of sound financial business. For particulars apply to—

E. B. OAKLEY, Manager.

IMPORTANT SALE OF VALUABLE PLANT AND MACHINERY, CORN MILL, OFFICE AND OTHER FURNITURE, MILLNER'S SAFE, OFF GOING TENANT'S SHARE OF GROWING WHEAT,

And other Effects, at

THE TRELOGGAN LEAD MINE,

About four miles from Holywell, Flintshire, and about three miles from Mostyn Station, on the Chester and Holyhead Railway.

MESSRS. CHURTON, ELPHICK, AND CO. beg to announce that they have been favoured with instructions from the Treloggan Lead Mining Company (Limited), TO SELL BY AUCTION, on Thursday and Friday, April 8 and 9, 1875, commencing at Twelve o'clock noon punctually, the WHOLE of the VALUABLE

PLANT AND MACHINERY,

Comprising a superior (nearly new) CONDENSING PUMP ENGINE, working 6 ft. stroke, with the most recent improvements; TUBULAR BOILER and fittings, 6 ft. diameter by 30 ft. long; a 12 in. PORTABLE ENGINE, with link motion and winding gear; massive crushing mill; driving shafts for jiggers; horse wheel with winch chains; excellent corn mill; crab winches; weighing machine by Hodgson and Stead, to weigh 8 tons; sundry lengths of iron shafting; pulleys; wood air pumps; iron and steel wire ropes; iron winding ropes; wrought iron and wood cisterns; kiddles and ladders; several capital pulley blocks; pulley sheaves, and hames; pit head; shear legs, 40 ft. high; a quantity of 8, 9, 12, and 24 in. pumps; windbores; working barrels; clack pieces; plunger poles and cases; match pieces; the contents of the dressing floors and the carpenter's and smith's shops; a quantity of bar iron, scrap iron, steel, screw bolts, strapping plates; two pans; cart wheels; a quantity of ropes and chains; iron buckets and clacks; bucket rods; sundry timber; several suits of mining clothes; miners' shovels; an assortment of office and other furniture; Millner's safe; copying press, &c.; together with the off-going tenant's one-half share of 21½ acres of growing wheat on the Perthymaen Farm.

Luncheon will be on the table each day at Eleven o'clock.

N.B.—Catalogues may be had at the offices of the Auctioneers, Chester; and Whitechurch, Shropshire.

DERBYSHIRE.

VALUABLE BEDS OF COAL AND OTHER MINERALS, situated under lands in the parishes of SOUTH NORMANTON and PINXTON, near ALFRETON, in the county of DERBY, containing together 235 A. 2 R. 39 P., or thereabouts, TO BE SOLD, BY AUCTION, BY

MR. JOHN MANGER POTT (with the approbation of His Honour the Vice-Chancellor, Sir RICHARD MALINS, the Judge to whose Court the Cause of Wilkinson v. Cox is attached), at the Mart, Wheeler Gate, Nottingham, on Wednesday, the 21st day of April, 1875, at Three for Four o'clock in the afternoon, in Two Lots, the above-mentioned

BEDS OF COAL AND OTHER MINERALS.

LOT 1 comprises "The Normanton Common or Waterloo Coal," "The Deep Soft Coal," "The Deep Hard Coal," "The Furnace Coal," "The Three-quarters Coal," and "The Black Shale Coal," lying under lands situated in the parishes of South Normanton and Pinxtion, in the county of Derby, containing together 235 A. 2 R. 39 P., or thereabouts.

And also all other Beds of Coal, and Beds, Seams, or Strata of Ironstone, lying above the said Black Shale Coal under the same lands.

The above are leased for 80 years from the 1st January, 1864, at a standing rent of £550 per annum, payable half-yearly, and subject to the provisions of such lease.

And also all other Beds or Seams of Coal and Ironstone under the same lands, and below the Black Shale Coal, and not included in the above, and known as "The Kilburn Seam," together with all underlying seams, including "The Belper Daily," and Alton Seams.

Particulars and conditions of sale may be obtained of Messrs. GROVER and HUMPHREYS, Solicitors, 4 King's Bench Walk, Inner Temple; Messrs. ALDERIDGE and THORN, Solicitors, No. 31, Bedford-row; H. TYRRELL, Esq., Solicitor, No. 14, Gray's Inn-square; Messrs. NORRIS and CO., Solicitors, No. 20, Bedford-row; and Messrs. TAYLOR and CO., Solicitors, 28, Great James-street, Bedford-row, London; or of J. SMITH, Esq., Solicitor, A. P. PLINT, Esq., Solicitor, and F. D. COOKE, Esq., Solicitor, all of Derby; and P. P. TRUMAN, Esq., Solicitor, Nottingham; and of the Auctioneer, 28, Cockspur-street, London, or Eldon Chambers, Wheeler Gate, Nottingham.

COUNTY OF CARMARTHEN, PARISH OF LLANDILO.

TO TIMBER MERCHANTS, CONTRACTORS, COLLIERY PROPRIETORS, CHEMICAL MANUFACTURERS, AND OTHERS.

HIGHLY IMPORTANT AND EXTENSIVE SALE OF

TIMBER TREES, PITWOOD, AND POLES.

MR. J. HOWELL THOMAS has been favoured with instructions TO SELL BY AUCTION, at the Castle Hotel, Llandilo, on Tuesday, the 20th day of April, 1875, in 12 lots, SEVERAL GROVES of exceedingly fine OAK, POPLAR, ASH, ALDER, ELM, and other TIMBER TREES and POLES, now standing and growing on Llandilo Llanid, Crug, Gurrey Demesne, Cefn Tir Esgob, Seyborwen, Cae Garw, Carreg Cennir, Cennan Tower, Tir-mawr Cwm Cib, Troed-y-rhiw, and Cilwunedd Farms, and Cefncoed and Tir Glanenni Farms, in the parish of Llandilo.

The Woodward at Glancrych, Llandilo, will show the lots, the whole of which are most conveniently situated for haulage over excellent roads, and within short distances of the Llandilo, Fairfach, and Derwydd Road Stations, on the London and North-Western and Llandilo and Llandilo Railways.

Detailed particulars may be obtained of Mr. J. HOWELL THOMAS, Land Agent and Valuer, Carmarthen.

Sale to commence at One o'clock.

THE COMPANIES ACTS, 1862 AND 1867.

IN THE MATTER OF THE CEFN BRWYNNO MINING COMPANY

(LIMITED). IN LIQUIDATION.

MR. J. J. PYNE, the Liquidator of the above company, INVITES TENDERS for the PURCHASE of the WHOLE of the PROPERTY belonging to the said company, comprising the valuable LEASE and extensive PUMPING and DRESSING MACHINERY, worked by three water-wheels, of 48 ft., 36 ft., and 34 ft. diameter.

The property is situated nine miles from the shipping port of Aberystwith, and is surrounded by some of the richest mines in Cardiganshire, viz.—East Dargen, South Dargen, and Goginan to the north, the Lisburne Mines to the south, the South Powell Consolidated to the east, and Tyllwyd to the west.

The mine is sunk to a depth of 107½ fathoms from surface, the lode principally wrought upon being from 3 ft. to 8 ft. wide, and the deposits of ore extending for upwards of 200 fms. long, worth from 15 cwt. to 2 tons to the fathom; during the past seven years 1000 tons of lead have been sold, realising £12,500, and 200 tons of blende for £250.

Orders to inspect the mine and the leases, also full inventory of plant and machinery, with all other particulars, may be obtained from the Liquidator, to whom tenders must be addressed on or before Monday, the 3rd day of May next, and who does not bind himself to accept the highest or any tender.

Dated this 2nd day of April, 1875.

6, Bishopsgate-street Without, London, E.C.

TO BE SOLD, BY PUBLIC AUCTION, within the office of the

Subscriber, No. 80, Renfield-street, Glasgow, on Tuesday next, the 6th day of April, at Two o'clock in the afternoon, the RIGHT to the LEASE, of 21 years, of the PROPERTY situated at QUETHER MANGANESE MINING COMPANY, DEVON-SHIRE, belonging to the QUETHER MANGANESE MINING COMPANY (LIMITED).

WM. HART, Jun., Liquidator.

THE COMPANIES ACTS, 1862 AND 1867.

IN THE MATTER OF THE PHENIX SILVER LEAD MINING COMPANY (LIMITED).

THE LIQUIDATOR of the above named company invites TENDERS for the PURCHASE of the WHOLE of the PROPERTY belonging to the said company, comprising the company's interest in the leases of the VALUABLE MINES known as the PHENIX SILVER-LEAD MINES, situated in the parish of Feranabuloe, in the county of Cornwall, which have been extensively developed; together with the whole of the valuable plant and machinery, comprising:—

60 inch cylinder PUMPING ENGINE, with two 14 ton tube BOILERS. 42 inch cylinder PUMPING ENGINE, with one 11 ton BOILER. 26 inch cylinder STEAM WINDING ENGINE, with CAPSTAN and 10 ton BOILER complete.

26 inch CORNISH CRUSHER complete. A very large quantity of valuable PUMPS and PITWORK. All the underground MACHINERY, RAILS, TRAMS, &c.

The complete MACHINERY on surface and DRESSING APPARATUS. BUILDINGS, STOREHOUSES, WORKSHOPS, STABLES, &c.

The mines have been opened to a great extent, and considerable quantities of ore sold, and they are supplied with all the necessary machinery for further development.

Tenders addressed to the Liquidator must be sent in at once. Permission to inspect the mines and the leases, together with full inventory of plant and machinery, conditions of sale, and all other particulars may be obtained of the Liquidator.

26, Bucklersbury, London, E.C. FREDERICK WARWICK.

COLLIERY NEAR SHEFFIELD.

A VALUABLE COAL FIELD, comprising about TWO HUNDRED AND FIFTY ACRES of UNGOAL COAL of the BARNSLEY TOP HARD SEAM, 5 feet thick, and about 70 yards from the surface, with FOUR SHAFTS ready sunk. Can be secured on very favourable terms. Distance about eight miles from Sheffield, with excellent communication by canal, rail, and road.

For further particulars, and to treat, apply to BROOMHEAD, WIGHTMAN, and MOORE, Solicitors, Bank Chambers, George-street, Sheffield.

FINE OPPORTUNITY FOR MAKING A FORTUNE.

TO BE SOLD, PART or ENTIRE (former preferred) of a COLLIERY ROYALTY, of about 170 acres, in NORTH WALES. The pit is sunk 40 yards deep to the seam containing the best description of Cannel. There are six other seams of good coal (the first being King Coal, only 14 yards under it) known to be beneath this seam. Its situation being half a mile from a railway station, and also admirably adapted for land sale, close to excellent roads, the working expenses, royalty, rent, and outlay small for a probable get in a few weeks of 40 tons daily at an almost fabulous profit, render the present undertaking one well worthy the immediate attention of capitalists, coal dealers, gas manufacturers, or colliery proprietors.

Address, "Q. E. D.," care of Mr. Watson, 15, Fenwick-street, Liverpool.

ON SALE, BY PRIVATE TREATY, FIVE UNDIVIDED EQUAL SIXTH PARTS OF A VALUABLE COLLIERY, or GALE of COAL, known as the

PRINCE ALBERT COLLIERY,

Situate in the Forest of Dean, Gloucestershire. Of the veins of coal included in this gale, the Yorkley, Whittington, and Coleford High Delf veins extend throughout the whole area of the property, which comprises about 614 acres, estimated. The Brazilly vein, which lies above these, and crops out upon the property, occupies an area of about 190 acres. The No Coal vein, above the Brazilly, but of less extent, is also included in the grant.

The property is situate about two miles from Coleford and seven miles from Lydney, and the main line of the Severn and Wye Railway runs through the property.

The coal is at present unopened, and is held under a grant of 17th December, 1844, which reserved a galeage rent of 1d. per ton, with a yearly minimum payment of £15. The gale rent has been refixed for 21 years, from 24th June, 1866, a 2d. per ton, and a yearly minimum of £50. These minimum rents have been paid, and will be allowed to be worked off before any surplus royalty above the present annual minimum rent is paid to the Crown.

Further particulars may be had of Mr. ROBERT JACKSON, Solicitor, Rochdale, Lancashire.

CHINA-CLAY.

TO BE SOLD, THE HALF-SHARE AND INTEREST in a CHINA CLAY SETT in CORNWALL. Price £1350. Apply, for further particulars, to Mr. JAMES SAUNDERS, Metal Broker, No. 64, Darlington-street, Wolverhampton.

TO BE SOLD, BY PRIVATE TREATY, A VALUABLE COLLIERY, consisting of a TRACT of COAL, called

FARMER'S FOLLY COAL LEVEL,

Situate between Hiller's Land and English Bicknor, in Her Majesty's Forest of Dean, in the county of Gloucester, together with the PLANT for working the same. The property is let upon lease, which will expire on the 25th of December, 1887, and the lessee is bound to pay a royalty of £150 per annum at the least. For particulars, apply to Mr. JAMES LEAKE, Solicitor, Shifnal, Salop.

ANTIMONY MINING PROPERTY FOR SALE.

A VALUABLE PROPERTY, with large deposits of very rich ANTIMONY ORE, TO BE SOLD, PART or ENTIRE. Address, "D. G.," MINING JOURNAL Office, 26, Fleet-street, E.C.

CORNISH ENGINES.

FOR SALE:—ONE excellent 70 in. CORNISH PUMPING ENGINE, 10 ft. stroke, with metallic piston, with or without three boilers, 13 tons each, with fittings.

ONE good 72 in. CORNISH BEAM ENGINE, 10 ft. stroke, with inverted cylinder.

ONE superior 50 in. CORNISH PUMPING ENGINE, 10 ft. stroke.

ONE first-class 28 in. WINDING ENGINE, 6 ft. stroke, suitable for a colliery, with drum.

ONE very good 20 in. horizontal WINDING ENGINE, 10 ft. stroke. PUMPWORK of all sizes; CORNISH CRUSHERS; BOILERS from 6 to 12 tons; and a LARGE STOCK of MATERIALS in general use in mines.

Apply to F. W. MICHELL and Co., Mine Material Depot, East Carn Brea, Redruth, Cornwall.

TO CAPITALISTS.

FOR SALE, IN NEW SOUTH WALES, 1340 ACRES TIN LANDS, Lode and Stream. 2430 ACRES COPPER LANDS (portions freehold). 2112 ACRES IRON AND COAL. 2250 ACRES COAL (on sea coast).

4000 ACRES COAL (inland, on railway line). 200 ACRES KEROSENE SHALE. 200 ACRES PLUMBAGO. 105 ACRES FREEHOLD GOLD DEPOSIT (Brown's Creek).

The above properties are all first-class, and on or near railway lines or water carriage, and are the very "pick" of their respective districts (being some of the first selections made).

Liberal terms, either as to purchase or working on royalty, will be given to parties able to carry out arrangements.

Apply to the owner, CHARLES W. WEEKES, Circular Quay, Sydney, N. S. W.

FOR SALE, ONE PAIR of horizontal direct-acting double action condensing PUMPING ENGINES; cylinder, 35 in. diameter, 36 in. stroke; pumps, 21½ in. diameter, 36 in. stroke; fly-wheel, 14 ft. diameter; about 12 tons. Will lift 2800 gallons a minute 150 ft. high. Have been very little used.

For further particulars, address, Mr. W. P. FRANCE, Priory Lodge, Peckham.

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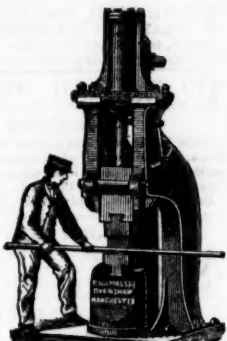
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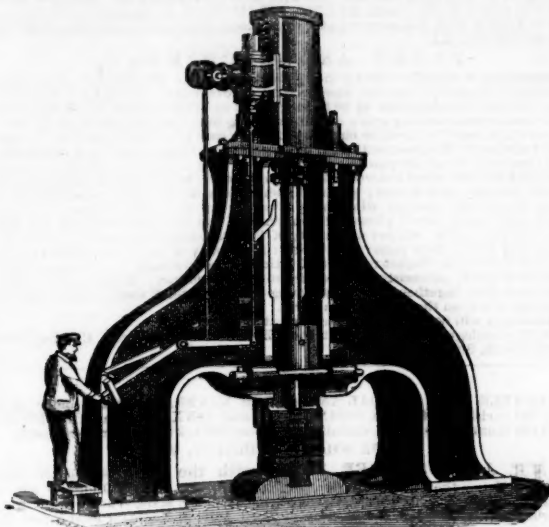
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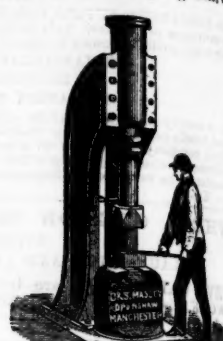
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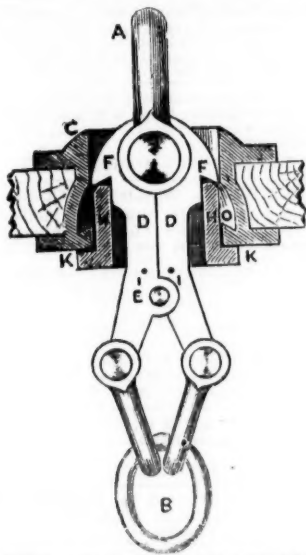
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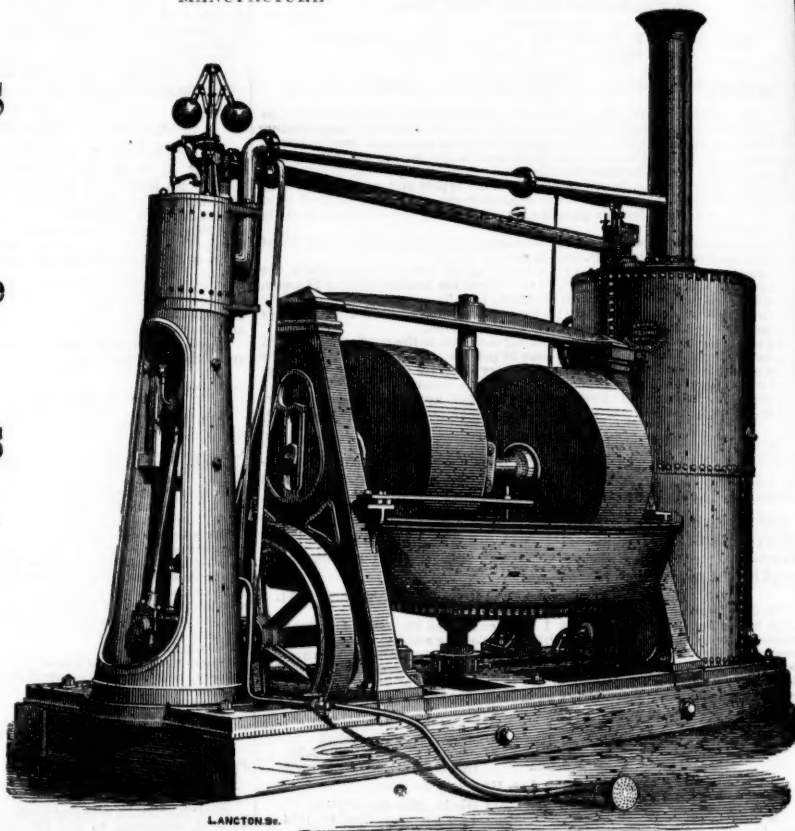
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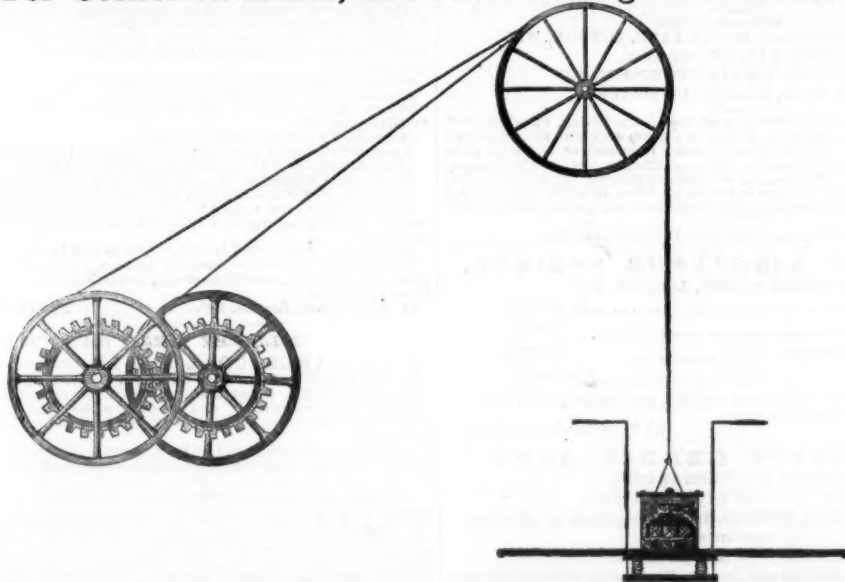
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Is the CHEAPEST and MOST POWERFUL EXPLOSIVE for every kind of MINING and QUARRYING OPERATIONS; for blasting in hard or soft, wet or dry ROCKS; for clearing land of TREE ROOTS and BOULDER STONES; for rending massive BLOCKS of METAL; for SUBAQUEOUS and TORPEDO purposes; and for recovering or clearing away of WRECKS, &c.

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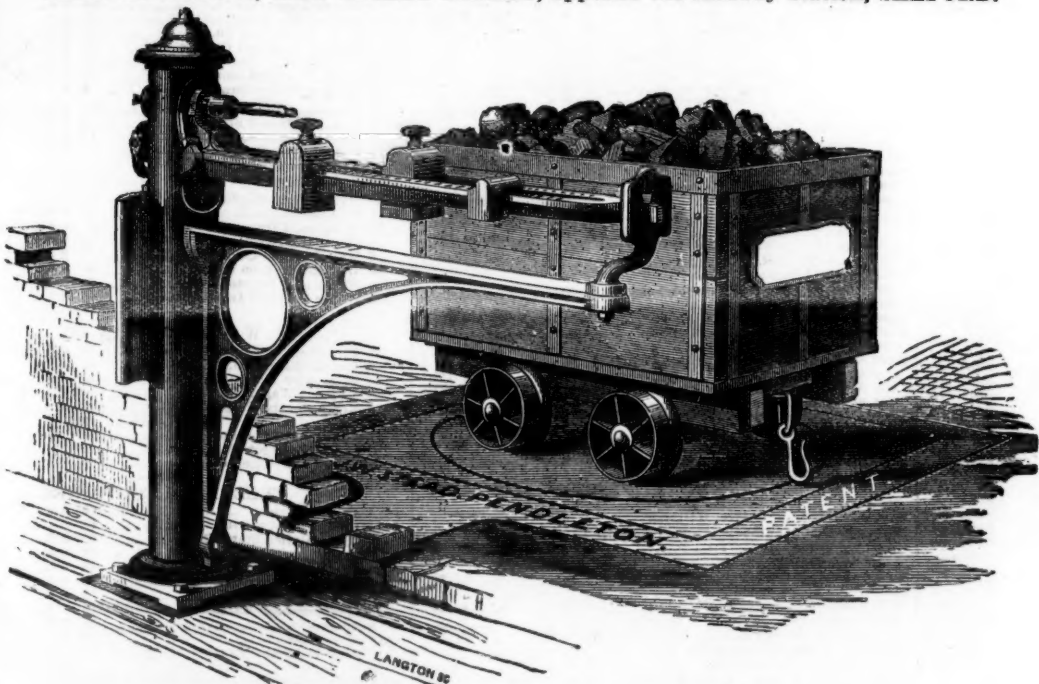
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sharp curves and heavy gradients, may always be had at a short notice from—

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MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, and EVERY
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ily for shipping purposes. Wagons in working order maintained by contract.

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. Loans received on Debenture; particulars on application.

THE PATENT SELF-ACTING MINERAL DRESSING MACHINE COMPANY (LIMITED).

T. CURRIE GREGORY, C.E., F.G.S.

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This company grant licenses, under their patents, for the use, singly or in com-
bination, of the most approved machinery for dressing ores, comprising Stamps
Jiggers, Classifiers, and Buddles.

MR. GEORGE GREEN, Mechanical Engineer to the above
Company, SUPPLIES MACHINES under the above Company's Patents
for DRESSING ALL METALLIC ORES. Dressing-floors having these Machines
possess the following advantages:—

- 1.—They are cheaper than any other kind in first outlay.
- 2.—From 60 to 70 per cent. of the labour is saved.
- 3.—Only about one-fourth of the space usually occupied by dressing-floors is required.
- 4.—The ore is made clean at one operation, and 5 per cent. of ores otherwise lost is saved.

Drawings, specifications, and estimates will be forwarded on application to—
GEORGE GREEN, M.E., ABERYSTWITTH, SOUTH WALES.

EXTRACTS FROM TESTIMONIALS RECEIVED:—

Mr. C. E. BAINBRIDGE, of the London Company's Mines, Middle-
ton-in-Teesdale, by Darlington, writing on the 27th September, 1873, says:—"After
a full season's experience of the very complete Dressing Machine erected by you
at our Colberry Mines, we are fully satisfied with our decision to adopt your patents
in preference to all others. The machinery does its work as well as we can desire,
and better than we anticipated. We are now getting through 70 tons of orestuff
per day, of rich quality. Without your machinery we should have been at a stand-
still, for we cannot get hands to supply our wants elsewhere. It saves fully on a
half of the old wages, and vastly more on the wages we now give, and the saving
in ore is not much short of 10 per cent. You can quote from this letter as you
think proper."

Mr. COULTAS DODSWORTH, of Haydon Bridge, writes, on the 15th
January, 1874:—"I have just returned from the Stonecroft and Greyside Mines,
where I have seen your 'Patent Ore Dressing Machinery' at work, with which I
must say, I was highly pleased. It is decidedly the best machinery I have ever
seen for the purpose, the results being as near perfection as possible, and I am quite
sure its use in this case will be a very great saving to the company. No large
mining establishment should be without your machinery, especially when labour
is difficult to procure—a mere fraction of the hands being only required as against
the old system, and the work altogether much better done, and a great saving of
ore effected. I have heard it said that your machinery is better adapted for poor
than for rich ores, but I have seen to-day I am quite confident it will
do for any kind of ores. I beg not only to congratulate, but also to compliment,
you on the great success of your 'Patent Ore Dressing Machinery.' You may use
this letter as you think proper."

Mr. MONTAGU BRALE, Managing Director of the Cagliari Mining
Company (Limited), says, on May 15th, 1873:—"I have much pleasure in speak-
ing of the great efficiency of your 'Patent Dressing Machinery,' as erected by you
at our mines at Rosas, in the Island of Sardinia. You will remember it has always
been considered impossible to dress, or rather separate, the minerals our ores con-
tain by machinery, but our captain assures me he gets a constant return of 74 per
cent. of lead with the greatest ease, and I know by the returns we are realising the
best market price. I consider this company is much indebted to you for the suc-
cess you have achieved at so small cost. It may interest you to know, from my
experience in several of the British possessions, including the whole of the Aus-
tralian Colonies, that my opinion is I have never seen any dressing machinery that
can so efficiently, and at so small a cost, dress, and separate metallic ores, however
close the mechanical mixture may be, as yours. You can use this letter in any
way you like."

The most satisfactory testimonials also have been received from the GREENSIDE
MINE COMPANY, Westmoreland; the TALLAGH MINING COMPANY, North
Wales, and others. Copies of these may be had from Mr. GREEN.

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Shares	Mines	Paid.	Last Pr.	Clos. Fr.	Total Divs.	Per Share	Last Paid
1500 Alderley Edge, c, Cheshire*	1 0 0	—	—	—	12 6 8	0 5 0	Jan. 1875
2000 Bampfylde, c, s, Devon*	1 0 0	—	—	—	0 2 0	0 2 0	June 1873
1500 Blakenham, c, Cardigan* (24 sh.)	11 5 0	—	—	—	0 10 9	—	Aug. 1872
2000 Botolph Claydon, c, St. John's*	11 5 0	—	—	—	0 10 9	—	Aug. 1872
1000 Broadford, c, Cardigan*	1 10 0	—	—	—	3 6 6	0 0 0	Mar. 1875
1000 Buckfastleigh, c, Devon*	1 10 0	—	—	—	4 16 3	0 12 6	Oct. 1872
1000 Cargill, c, Newbury*	5 4 5	—	—	—	1 6 6	0 2 6	Aug. 1873
1000 Caswell, c, Cumberland*	2 10 0	—	—	—	0 7 6	0 7 6	Feb. 1873
1000 Carr Breck, c, Illogan*	35 0 0	—	—	—	11 17 0	0 7 6	Jan. 1873
1000 Cath & Jane, c, Penrynendendraeth	5 0 0	—	—	—	116 10 0	0 10 0	May 1872
2400 Crook's Kitchen, c, Illogan*	30 14 9	—	—	—	0 2 0	0 2 0	July 1873
1000 Deacon, c, c, Calstock	10 14 10	—	—	—	0 2 0	0 2 0	July 1873
1000 Duke's Valley, c, Lancashire*	5 0 0	—	—	—	0 2 11	0 5 6	Feb. 1874
1000 East Ballinacree, c, Sancerre*	1 0 0	—	—	—	14 19 0	0 2 0	Oct. 1872
1000 East Carndon, c, St. Cleer*	2 14 6	—	—	—	224 10 0	0 1 0	Oct. 1874
1000 East Darren, c, Cardiganshire	32 0 0	—	—	—	13 11 3	0 2 6	May 1873
1000 East Pool, c, c, Illogan	0 9 9	—	—	—	20 7 6	0 7 6	Oct. 1874
1000 East Wheal Lovell, c, Wendron*	5 19 0	—	—	—	0 0 0	0 0 0	May 1873
1000 Exmouth, c, Christow	0 7 6	—	—	—	80 15 0	0 10 0	Sept. 1872
2000 Foxdale, c, Isle of Man*	25 0 0	—	—	—	6 7 4	0 0 0	Jan. 1875
1000 Glasgow Carr, c, 50,000 £1 p., 10,000	10 10 0	—	—	—	17 9 0	0 0 0	Jan. 1875
1000 Glengarnock, c, Wrexham*	5 0 0	—	—	—	0 2 0	0 1 0	Aug. 1874
2000 Great West Van, c, Cardigan*	2 0 0	—	—	—	15 19 6	0 2 6	June 1873
1000 Green Wheel Vor, c, c, Helston*	40 15 0	—	—	—	1 12 0	0 4 0	Oct. 1874
1000 Green Hurth, c, Durham*	0 6 0	—	—	—	0 2 0	0 1 0	Dec. 1874
2000 Grogginsville, c, Cardigan*	2 0 0	—	—	—	0 2 3	0 1 3	Feb. 1875
1000 Gunislake (Clitters), c, c	5 6 0	—	—	—	82 5 0	0 15 0	Oct. 1872
1000 Herodsfoot, c, near Liskeard*	8 10 0	—	—	—	4 3 0	0 0 0	Oct. 1872
1000 Hingston Downs, c, Calstock* (£1 sh.)	2 0 0	—	—	—	0 3 11	0 0 0	Mar. 1873
2000 Killalee, c, Tipperary	1 0 0	—	—	—	564 10 0	0 1 0	July 1874
400 Lisburne, c, Cardiganshire	18 15 0	—	—	—	0 17 6	0 2 6	Oct. 1874
1000 Lovell, c, Wendron	0 10 0	—	—	—	4 13 0	0 12 0	Sept. 1873
1000 Mhindu Valley, c, Cardigan*	1 0 0	—	—	—	0 9 9	0 9 9	Feb. 1874
1000 Miners Mining, c, Wrexham*	5 0 0	—	—	—	0 1 4	0 0 0	July 1873
2000 Mining Co. of Ireland, c, c, l ^a	7 0 0	—	—	—	0 8 0	0 3 6	July 1872
1000 North Bendre, c, Wales	2 10 0	—	—	—	0 17 6	0 2 6	Oct. 1874
2000 North Levant, c, c, St. Just*	12 2 0	—	—	—	4 13 0	0 12 0	Sept. 1873
1000 Old Treburget, c, ordinary shares	1 0 0	—	—	—	0 9 9	0 9 9	Feb. 1874
1000 Old Treburget, c, (10 per cent. pref.)	0 10 0	—	—	—	0 1 4	0 0 0	July 1873
1000 Penhalls, c, St. Agnes	9 2 0	—	—	—	0 8 0	0 8 0	Nov. 1871
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
1000 Penrhall, c, St. Agnes	8 0 0	—	—	—	3 9 0	0 2 6	Jan. 1875
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